RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

FREIGHT TRAFFIC ISSUE

DECEMBER 2, 1950

5 Copy 1 18 51

DEC 4 1950

IT TAKES ONLY ONE *to install pipe*

but FIVE to repair it!

One of the most convincing demonstrations on the economy of using *durable* material is a repair job where low-first-cost material has failed—and is being replaced.

The original installation had been quickly made by plumbers. But the replacement calls for hours of work by as many as five crafts: plumber, mason, plasterer, carpenter, painter. And this is only part of the cost story. The loss in utilization during the shut-down may amount to far more than the maintenance charge.

True, you pay a little more to *begin* with for Byers Wrought Iron pipe . . . but you pay a lot less to *end* with. In literally thousands of applications where corrosion costs you more than wrought iron, the use of this material is the soundest kind of economy move.

WHY WROUGHT IRON LASTS

This notch-fracture test specimen illustrates the unusual fibrous structure of wrought iron—which is responsible for the unusual corrosion resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

You will find a lot of helpful information on the control of excessive maintenance through the use of Byers Wrought Iron pipe in our technical bulletin, WROUGHT IRON FOR PIPING SYSTEMS. We will be glad to send you a copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco, Export Division: New York, New York.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

Do your liquid shipments belong in tank cars of Alcoa Aluminum?

Ladings Like These Travel Safely in Aluminum:

ACETIC ANHYDRIDE

AMMONIUM NITRATE

BUTYRALDEHYDE

FATTY ACIDS

FORMALDEHYDE

GLACIAL ACETIC ACID

GLYCERIN

HYDROGEN PEROXIDE

NAPHTHENIC ACID

NITRIC ACID

NITROGEN FERTILIZER

NYLON SALT SOLUTION

OLEIC ACID

TRICHLOROBENZENE

WATER WHITE ROSIN

If purity of liquid ladings at the point of delivery is your problem. If tank car maintenance is costing too much. Perhaps you should be using *aluminum* tank cars. For these two reasons:

NO DAMAGE TO LADINGS

Aluminum does not contaminate or discolor sensitive liquids. Does not promote decomposition of chemicals.

NO DAMAGE TO CARS

Many acids and other ladings which corrode ordinary tanks have no effect on aluminum. Far less painting and maintenance required.

To find out if your liquid shipments belong in tank cars of Alcoa Aluminum, contact your car builder for full information. Or write ALUMINUM COMPANY OF AMERICA, 1816M Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA

First in Aluminum

THE METAL THAT LASTS

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year, U. S. and Canada. Single copies, 50 cents each. Vol. 129, No. 23.

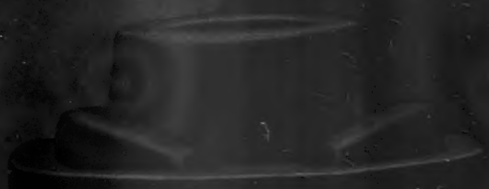
QUALITY

WITH

Outstanding

PERFORMANCE

CLASS A-22-XL



W. H. MINER INC. - CHICAGO

TOPS with Shop Men
Because
"It's Easier with Hyatts"

The ease with which Hyatt Journal Boxes can be installed, removed, inspected, and serviced, together with their reputation for consistently outstanding performance, truly makes them "Tops with Shop Men."

You can simplify your maintenance procedures, reduce your spare parts inventory and make things a lot easier on your shop men by using Hyatt journal boxes under new and changeover passenger car equipment.

On locomotives, too, you can get full advantage of the outstanding performance and easy maintenance of Hyatt journal boxes. Hyatts are available for all makes of diesel locomotives.

If you would like to know about the kind of performance you can expect from Hyatt journal boxes or the kind of service available through our service engineering department, call or write Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

Write for YOUR COPY OF A NEW JOURNAL BOX WALL CHART DESIGNED TO SIMPLIFY PARTS IDENTIFICATION. ASK FOR JOURNAL BOX WALL CHART.

HYATT ROLLER BEARING JOURNAL BOXES

Vol. 129, No. 23 December 2, 1950

RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.

Published by
SIMMONS-BOARDMAN
PUBLISHING CORPORATION
The House of Transportation
and Building

Publisher of

Railway Age
Railway Engineering & Maintenance
Railway Mechanical & Electrical Engineer
Railway Signaling & Communications
Car Builders' Cyclopedia
Locomotive Cyclopedia
Railway Engineering & Maintenance Cyclopedia
American Builder
Marine Engineering & Shipping Review
Marine Catalog & Buyer's Directory
Books covering transportation and building

Office of Publication, Orange, Conn. Editorial and Executive Offices at 30 Church Street, New York 7, N. Y., and 79 West Monroe Street, Chicago 3, Ill.

Washington 4, D. C.: 1081 National Press Building—Cleveland 13: Terminal Tower—Seattle 1: 1914 Minor Avenue—Portland 5, Ore.: Terminal Sales Building—Los Angeles 17: 816 West Fifth Street—Dallas 4: 2909 Maple Avenue.

Samuel O. Dunn, Chairman Emeritus. James G. Lyne, President. J. S. Crane, Vice-President and Secretary. C. Miles Burpee, Harry H. Melville, C. W. Merriken, John R. Thompson, R. E. Thayer, H. E. McCandless, Vice-Presidents. Robert G. Lewis, Assistant to President. Arthur J. McGinnis, Treasurer. Ralph E. Westerman, Assistant Treasurer.

Subscriptions: including 52 regular weekly issues, and special daily editions published from time to time in New York or in places other than New York, payable in advance and postage free — United States, U. S. possessions and Canada: 1 year, $6.00; other countries not including daily editions in Western Hemisphere: 1 year, $10.00; 2 years, $16.00; other countries: 1 year, $15.00; 2 years, $25.00. Single copies, 50 cents each, except special issues.

H. E. McCandless, Circulation Manager, 30 Church Street, New York 7.

IN THIS ISSUE

EDITORIAL COMMENT

The Railroads Are Fortunate in the Quality of Their Biggest Customers 43

Whittling Away the Car Shortage 44

What Is Wrong on the Long Island? 45

FREIGHT TRAFFIC ARTICLES

Tunnels By-Passed to Speed Oversize Cars 46

C. & E. I. Issues "Rate Streamliner" 50

Simple Empty Car Classification Cuts Damage and Switching Costs 52

"Absolute Necessity for Performance as Scheduled," by W. H. Schmidt, Jr. 54

From Oil to Grain 58

A Shipper Solves a Troublesome Switching Problem 60

Many Railroad Customers Do Not Favor a National L.C.L. Agency 62

GENERAL ARTICLES

Improving Steam Locomotive Performance, Part II 64

New and Improved Products of the Manufacturers 70

DEPARTMENTS

General News 71

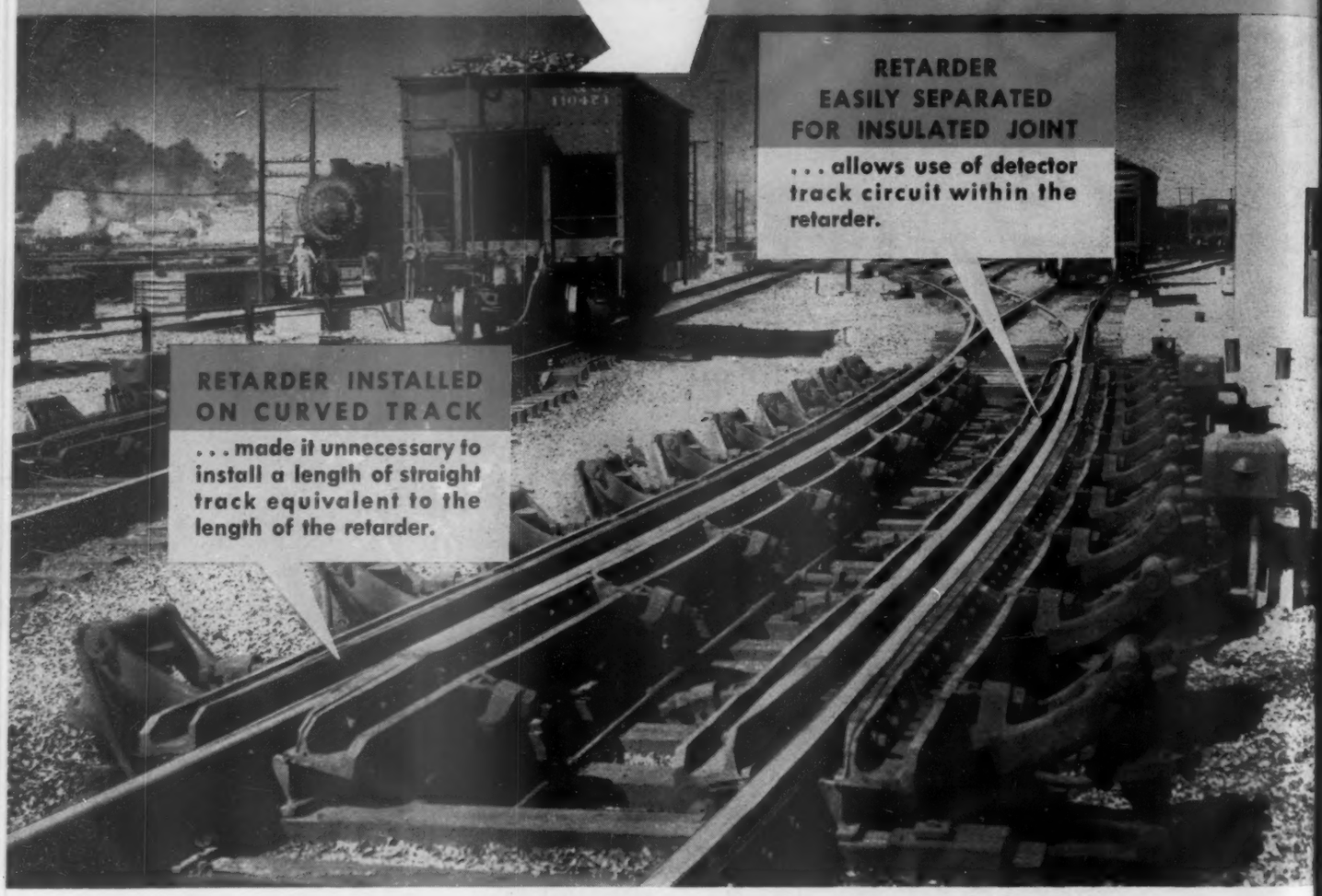
Railway Officers 92

Current Publications 104

Freight Operating Statistics 108

Railway Age is a member of Associated Business Papers (A. B. P.) and Audit Bureau of Circulation (A. B. C.) and is indexed by the Industrial Arts Index and by the Engineering Index Service. Published each Saturday by the Simmons-Boardman Publishing Corporation, Orange, Conn. Printed in U. S. A.

Space Saving Features
of "UNION" Retarders
MADE THIS YARD EXPANSION POSSIBLE


RETARDER
EASILY SEPARATED
FOR INSULATED JOINT
. . . allows use of detector track circuit within the retarder.
RETARDER INSTALLED
ON CURVED TRACK
. . . made it unnecessary to install a length of straight track equivalent to the length of the retarder.

Recently the Chesapeake and Ohio Railway Company increased the number of classification tracks in their Russell Yard from 26 to 52 in order to handle a greater number of cars swiftly and efficiently.

Only a limited amount of space could be provided for the huge yard expansion . . . but by taking advantage of the space-saving features of "Union" Retarders, the railroad was able to construct a yard having exactly the characteristics desired. And, despite the 100% increase in number of tracks, *it was only necessary to increase the amount of retardation 14.1%* . . . from 1323 ft.-8 in. to 1510 ft.-1 in. or 186 ft.-3 in. increase in rail feet of retardation.

Have you a similar yard problem? Get in touch with out nearest district office and we'll send an engineer to help you find the answer.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

STATESMANLIKE ATTITUDE: The railroads may have their problems, but they have at least one thing to be thankful for—that a large number of their most important and most influential shippers, as represented in the N.I.T. League, are sufficiently statesmanlike to recognize and face realistically some of the economic facts of life. The league's action at its recent San Francisco convention, for example, as reported in last week's issue, and as further discussed in this issue's leading editorial, indicates its awareness of the facts that (1) politically approved increases in the costs of any self-supporting, unsubsidized agency of transportation must inevitably be offset by the rates which that agency charges; and (2) industry in general cannot expect to increase its own prices to meet rising costs and at the same time deny higher rates to railroads when they, too, are faced with rising costs.

"ON TIME": Second morning delivery of l.c.l. freight from the eastern seaboard to the midwest means on time performance all the way through. How that performance is maintained over the first leg of the two-line Lackawanna-Nickel Plate route is described by a *Railway Age* editor on page 54. He is, incidentally, the third member of this paper's staff to ride one of these "hotshot" freights since the second morning schedule was inaugurated by a number of different roads last April.

NATIONAL L.C.L. AGENCY? Even though the National Association of Shippers Advisory Boards is on record in favor of a national agency for the handling of l.c.l. freight by railroad, there appear to be a good many individual shippers who don't think such an agency is the way to provide better l.c.l. service. Some 47 per cent, in fact, of those who commented on a recent *Railway Age* editorial on the subject either oppose such an agency or are undecided about it. Some of their diverse views, and some suggestions for bettering present service, are set out on page 62.

NEWS ROUND-UP: L. & N. orders 62 Diesels; Southern orders 100.—Equipment orders by Class I railroads in year's first 11 months total $1,039,588,600, more than ever recorded in any previous full year. Unit orders total 128,987 freight cars, 2,586 locomotives and 61 passenger-train cars.—I.C.C. again defers joint rail-barge rates.—Supreme Court dismisses Georgia anti-trust suit.—Five railroads propose pool of New York-Miami l.c.l. service.—American University plans third annual Institute of Industrial Transportation and Traffic Management.—Missouri Pacific to spend over a $9.5 million for improvements in 1951.

TROUBLES NEVER COME SINGLY: The frequent truth of that old adage came home with bitter force to the harassed and poverty-stricken Long Island on Thanksgiving eve, when—apparently because of a motorman's failure to observe speed restrictions—78 persons were killed and 203 injured in a rear-end collision between two commuter trains at Kew Gardens, N. Y. The accident, and some of the events which have resulted from it, is the subject of a detailed report in the News pages. It is also the theme of one of this issue's editorials, which ventures to suggest that what the Long Island most needs is a friendlier attitude on the part of its patrons and less disposition on the part of professional politicians to make political capital out of its troubles.

RATE MAN'S DREAM: A 24-page "Freight Rate Streamliner," developed on the Chicago & Eastern Illinois, is bringing a few rays of sunshine into the busy lives of a good many railroad and industrial rate clerks. As related in the article on page 50—which is illustrated with sample pages from the "Streamliner"—the new compilation simplifies the work of applying recent rate increases to basic commodity and class rates. It does this by combining, so far as practical, general rate increase mechanics so that ratemen can determine fully increased rates in a single operation. Best thing about it? The C.&E.I. will fill, free of charge, all reasonable requests for copies.

RAIN, WIND, SNOW: It may not have been the worst storm ever to hit the northeastern part of the country. But what happened last Saturday will do well enough until something worse comes along, which everybody hopes will be a long, long time. How the drenching rain, heavy snow and high winds affected the railroads in the storm area is told in this issue's leading News report.

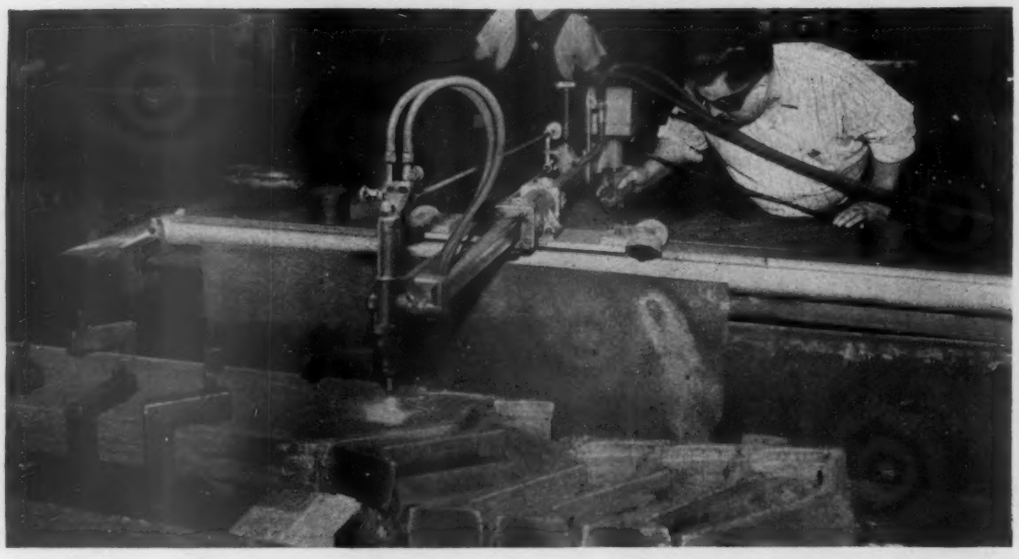
NO MORE DETOUR: $9 million is a lot of money—even today. But when it can be recovered through reduced operating costs in a little over six years, and when, in addition, it puts a railroad in better position to solicit and handle traffic, it's well worth spending. That's what the Pennsylvania thought—and did—when it modernized one restricting tunnel and eliminated four others, to create what virtually amounts to a new through freight route between Pittsburgh, Pa., and Columbus, Ohio. Both the economic and engineering aspects of the big job are covered in the illustrated article beginning on page 46.

STILL IN SHORT SUPPLY: As both editorial and News pages of this issue amply testify, the railroads are making good with a vengeance on their promises to augment the nation's freight car fleet. But cars on order are not, unfortunately, cars in service; and so Car Service Division Chairman Gass, in his latest monthly review of the national transportation situation, frankly states that car shortages still exist. His analysis—which isn't all on the dark side by any means—is summarized in the News.

FOR BETTER STEAM PERFORMANCE: Part II of an abstract of a report on this subject—Part I of which appeared in last week's issue—begins on page 64.

NOW A GAS SHAPE CUTTING MACHINE

THAT IS: *1. low-priced*
2. portable
3. accurate



That's a statement that is 100% true! Ask the Milwaukee Road . . . they have found this new machine—the AIRCO No. 3 MONOGRAPH—excellent for shape cutting around the shop.

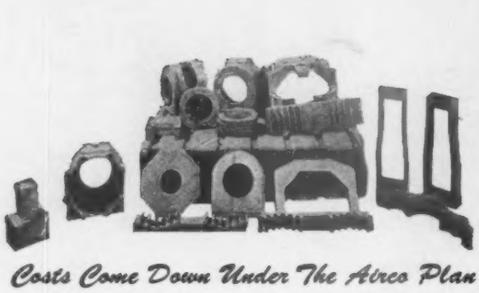
To date, the Milwaukee has cut more than 16,000 gondola drop-floor hinges—stack cutting them from mild steel plate, as shown above. This one operation saved more than the price of the machine. In addition, the road cut hundreds of other car and locomotive parts—body center plate blanks, engine truck roller racks, spring hangers, pipe clamps and many others.

The NEW Airco No. 3 Monograph will handle practically any cutting job—straight line, circle, or bevel, in addition to angles, curves and other ordinary shapes. It can be used stationary or portable, as the occasion demands.

This NEW machine, lowest priced of its type on the market (only $695, including a manual tracing device, torch, tip, tubular rail, hose and carrying case), will cut steel up to 8 inches thick. Its cutting area is 32 inches by 56 inches, and with the addition of sections of 6-foot, 8-inch tubular rail, the length of the cutting area can be extended as desired.

SPECIAL TRIAL OFFER
(Good in Continental U.S.A. Only)

If you would like to try this machine for two weeks in your own shop on your own work, just drop a letter to your nearest Airco office, and they will advise you how this can be arranged . . . or, if you would like a descriptive folder (ADC-660), they will be glad to send you one.



Costs Come Down Under The Airco Plan

AIRCO AIR REDUCTION
Offices in Principal Cities

Headquarters for Oxygen, Acetylene and Other Gases...Calcium Carbide... Gas Cutting Machines... Gas Welding Apparatus and Supplies... Arc Welders, Electrodes and Accessories

You have tried this

BUT IT'S NOT ENOUGH...

PACKAGE ENGINEERING

in recent years has become an important factor in reducing lading damage. Some railroads even employ their own packaging engineers to advise shippers. Nevertheless, lading damage claims of $113,844,712 in 1949 show that all current efforts toward damage prevention are not enough.

lading damage PREVENTION starts here

WITH DOUBLE-ACTION RESISTANCE TO IMPACT

It costs so little extra to provide the finest lading damage prevention that the savings on damage costs and car repair soon pay the premium.

Even though cars are off your line for months at a time, it will pay you to equip all box cars, stock cars and refrigerator cars with Waughmat Twin Cushions. Twin Cushion double-action takes the bite out of impact, minimizes longitudinal shocks, reduces lateral components and *halves* the lading- destructive component vertical shocks of starting, stopping and coupling. With Twin Cushions, there is practically no free slack and surging of highspeed freight trains is reduced to a minimum.

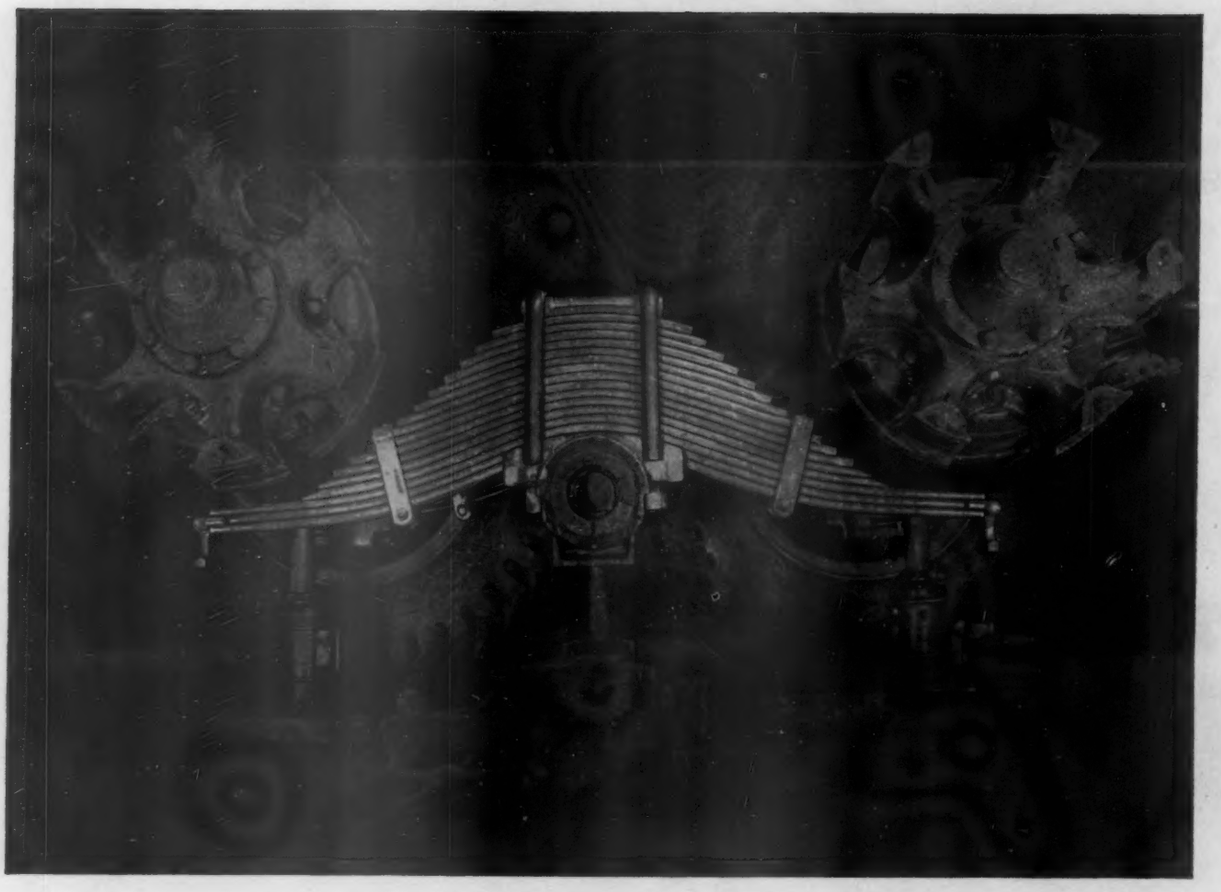
For unexcelled car and lading protection, specify Waughmat Twin Cushions for new cars or draft gear replacement on existing cars.

TYPE WM 4-6
A.A.R.
APPROVED

WAUGHMAT *Twin Cushions*

TRADE MARK REGISTERED

WAUGH EQUIPMENT COMPANY
New York • Chicago • St. Louis • San Francisco
Canadian Waugh Equipment Company
Montreal



It doesn't pay to overgrade in selecting spring steels

In selecting spring steels it is generally considered sound practice to use grades whose alloy content is consistent with the thickness of the finished spring section. Springs of heavy section, for instance, usually require steel fairly rich in alloy content while those relatively light in section can be made economically from steel of medium or low alloy content.

But light or heavy, lean or rich, there are three properties that all spring steels must have for good results: superior impact value; excellent fatigue-resistance; and high yield point. A proper balance of these properties is needed to satisfy the mass requirements of the section as well as satisfactory response to heat treatment.

There is no short cut to economical selection of spring steels. It takes study and experience with various analyses and heat treatments. In this connection our metallurgists will be glad to help you arrive at the most economical solution. They will give unbiased advice based on long experience with all types of spring steels.

We manufacture the entire range of AISI steels as well as special grades and carbon steels.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation—Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM ALLOY STEELS

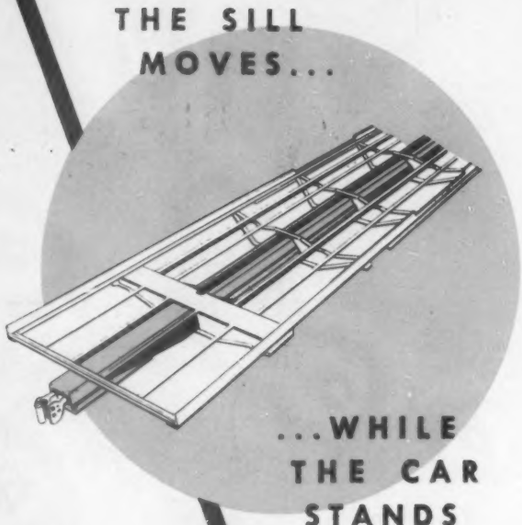
THIS COULD BE A BEAUTIFUL FRIENDSHIP

Shipper A, consignee B and their respective carriers C & D, were once good friends and could be again, but . . .

Shipper A proudly shipped B several carloads of his newest gadgets. They arrived damaged . . . none saleable. B blamed A for poor packaging but most of all he blamed D the delivering railroad. A, his good-will impaired, insisted that C, the originating carrier, was wholly to blame, so now A and B ship by truck, while C and D whistle for business

Exaggerated? Not a bit of it. For every damage claim, two railroads are in hot water, two more customers become prime prospects for truck transportation. 91 billion ton miles of truck-carried freight last year is pretty good proof that all this is true.

Protect valued customers' valuable lading. Insure customer good-will by equipping all new cars with "shock-force control" to provide that 40% extra lading protection. Shock-proof all new cars with Duryea Cushion Underframe, the modern protection for freight cars and lading.

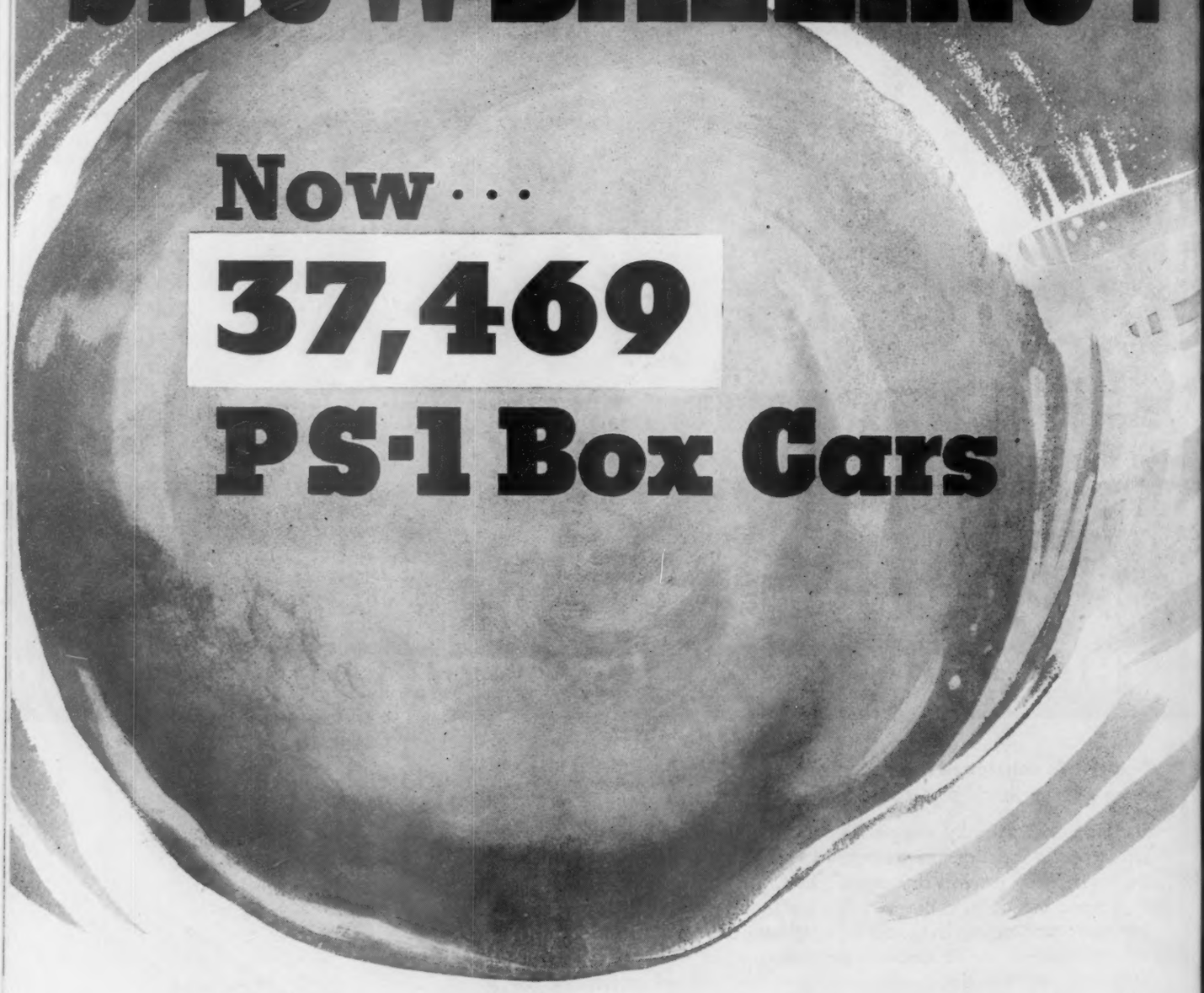


FOR THAT 40% EXTRA LADING PROTECTION

duryea cushion underframe

HULSON CO. 332 SOUTH MICHIGAN AVENUE CHICAGO 4, ILLINOIS

SNOWBALLING!

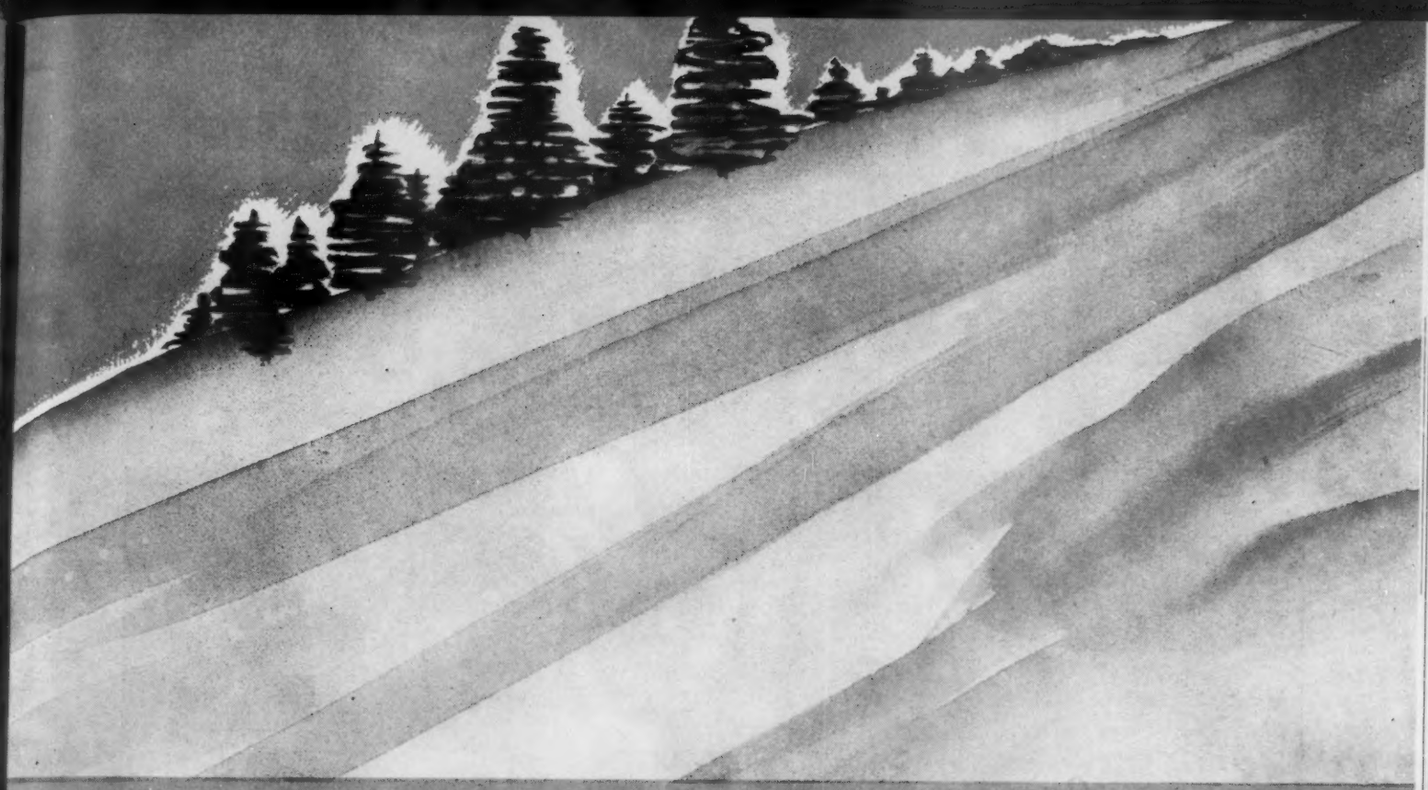


Now . . .

37,469 PS-1 Box Cars

The first PS-1 box cars were ordered on Oct. 7, 1946—by the Lehigh Valley, which has just taken delivery of its second order. Since then, in just four years, the total of PS-1's delivered or on order has snowballed to 37,469 (as of Nov. 1, 1950).

These cars have been bought by *thirty-seven* different railroads. An even more important endorsement of the PS-1 as a quality product is the large number of these customers who have placed *repeat* orders...some as many as *three and four* times!



PS-1...a quality box car efficiently produced

Continuous assembly-line production, and many years of experience, are all-important in making sturdy, dependable PS-1 box cars economically available. But at Pullman-Standard, *standardization* never holds back *progress*. Dozens of improvements have been adopted since the first PS-1 rolled off the production line.

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH
BIRMINGHAM • SAN FRANCISCO

ALWAYS ON THE

NATIONAL MALLEABLE and STEEL

TRUCKS • COUPLERS • YOKES • DRAFT GEARS

JOB...YOU CAN *SEE* IT!

NATIONAL C-1 TRUCKS

have the all-important friction control mechanism in full view

The dependable performance of this mechanism produces a smooth, safe ride, resulting in 3-way protection: to lading, to equipment and to roadbed.

Mounted in the C-1 TRUCK side frames, at each side of the bolster, the spring-controlled friction wedges apply a positive, friction-dampening effect.

The superior riding qualities of the NATIONAL C-1 TRUCK have been proved in A. A. R. tests, and further substantiated by millions of miles of service on leading American railroads.

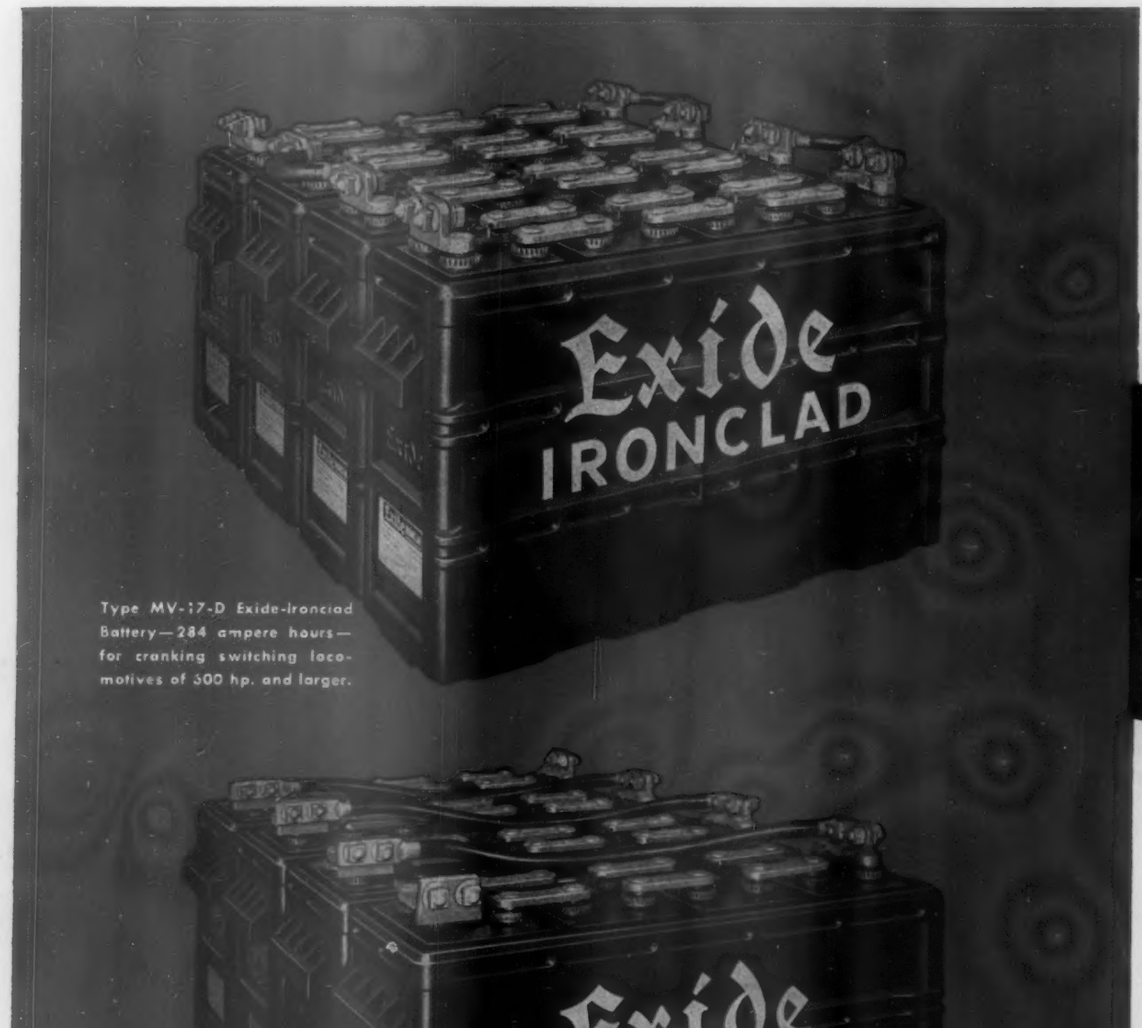
For the over-all protection of roadbed, equipment and contents, specify "lading-conscious" NATIONAL C-1 TRUCKS.

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY
CLEVELAND 6, OHIO

NATIONAL *Products*
FOR TRANSPORTATION AND INDUSTRY
M&S Co.
Est. 1868

CASTINGS COMPANY

JOURNAL BOXES AND LIDS

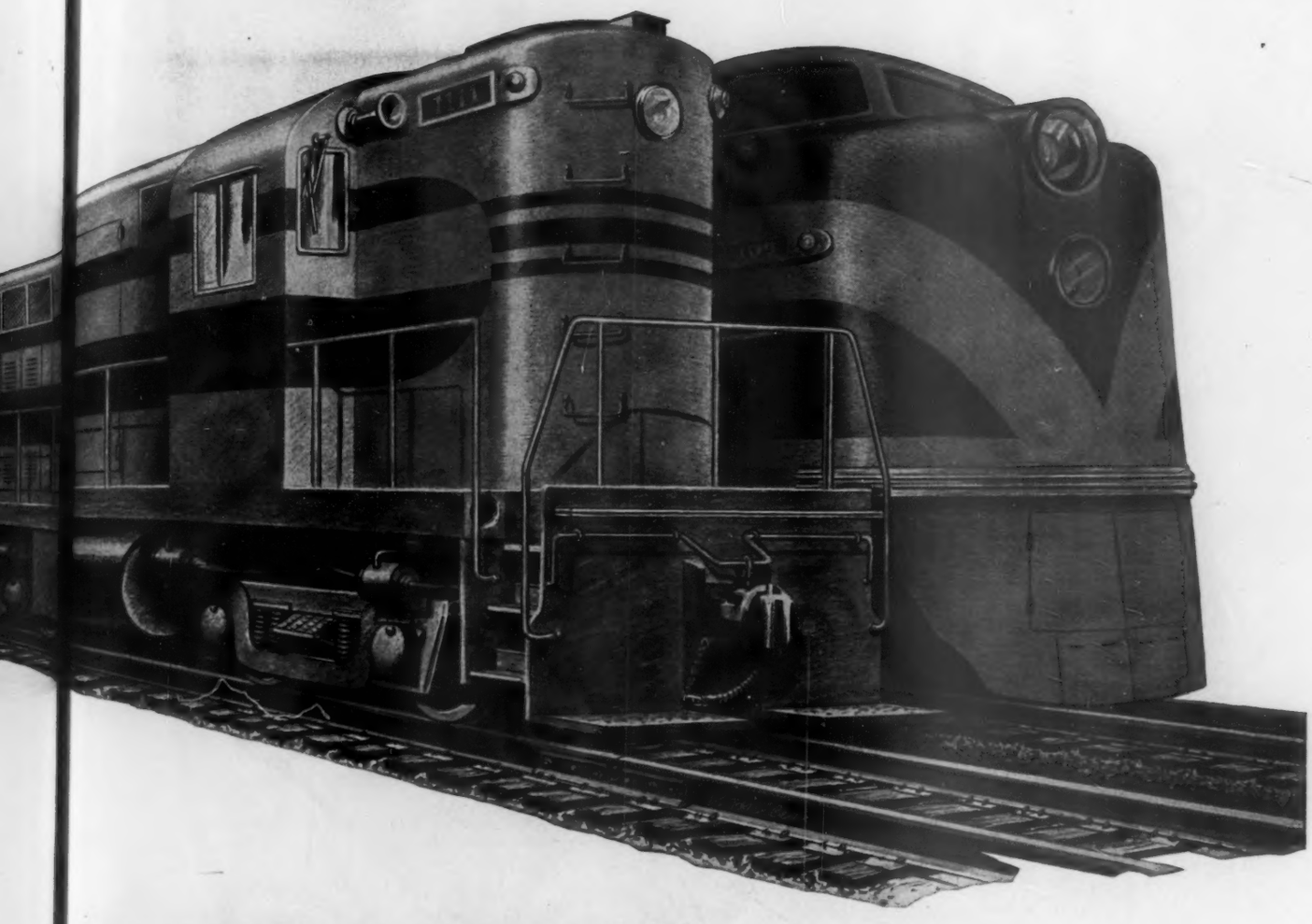


Type MV-17-D Exide-Ironclad Battery—284 ampere hours—for cranking switching locomotives of 500 hp. and larger.

Type MV-25-D Exide-Ironclad Battery—426 ampere hours—for cranking road locomotives of the larger sizes.

DEPENDABLE
POWER
Exide
IRONCLAD BATTERIES

1888 . . . DEPENDABLE BATTERIES FOR 62 YEARS . . . 1950



EXIDE-IRONCLAD the LONG-LIFE BATTERY that brings DEPENDABLE PERFORMANCE, ECONOMY to your Diesel locomotive cranking

EXIDE-IRONCLAD BATTERIES give you:

- quick breakaway and fast acceleration of engine to firing speed.
- sufficient power reserve *at all times* for positive operation of control equipment.
- high availability . . . uninterrupted on-line service.
- exceptionally long battery life—low depreciation.
- ease of maintenance—also, easy to change and keep charged.
- low costs of operation, upkeep, repair.
- rugged construction for hard, continuous use.

All these qualities and others make Exide-Ironclad Batteries outstanding for Diesel locomotive cranking.

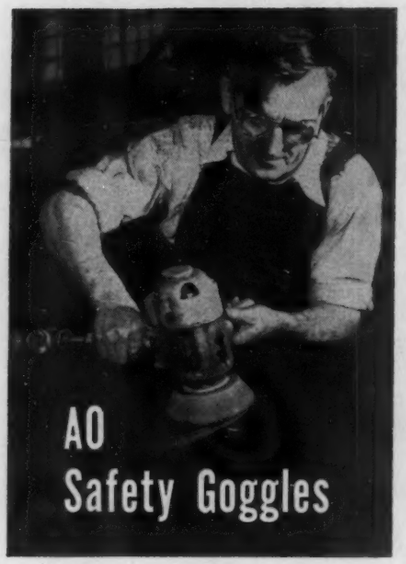
STANDARDIZATION adds further economies. New molded container assembly provides a universal, interchangeable battery for cranking Diesel locomotives of practically every size and make.

Exide-Ironclad Batteries are the Best Power Buy—AT ANY PRICE

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

"Exide-Ironclad" *Reg. Trade-mark U. S. Pat. Off.*

WHEN IT'S AN EXIDE . . . *YOU START*



NOW...

AO 7000 METAL SAFETY GOGGLE

WITH PERMANENTLY ATTACHED SIDESHIELDS*

*(No removal necessary when replacing lenses)

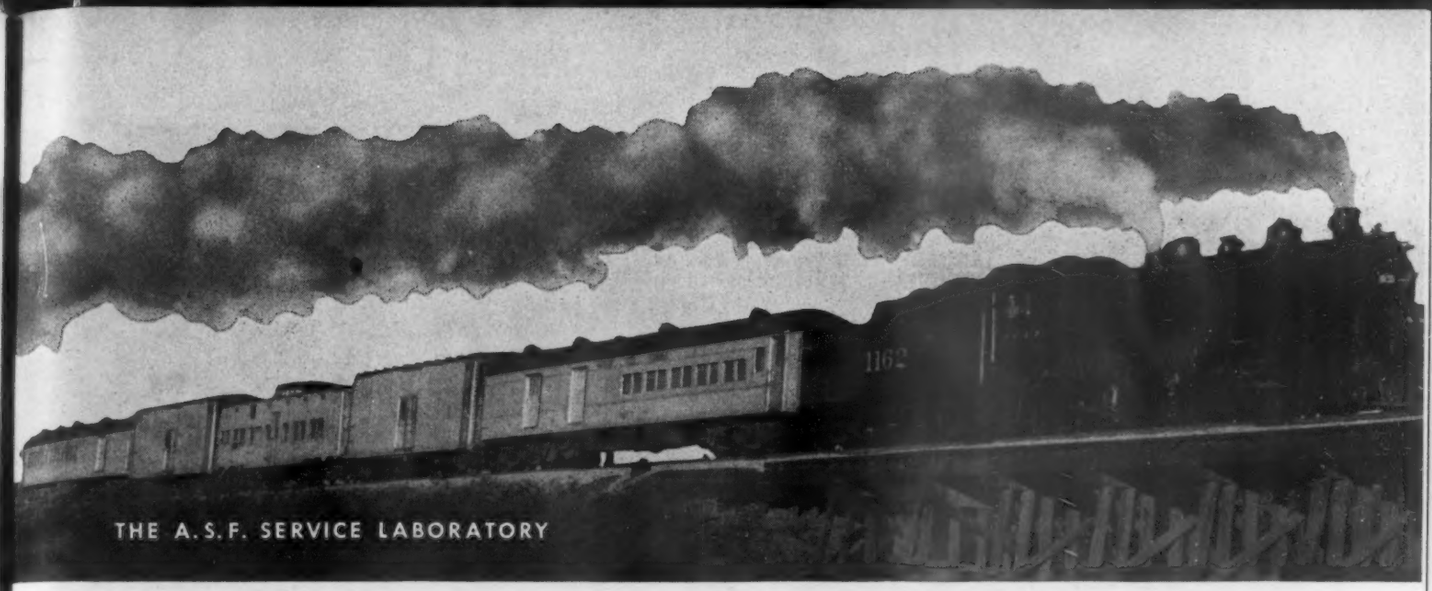
Here is a goggle with all the safety values of its predecessor but with added new features for greater convenience, more attractive appearance and longer life. Of major importance are the NEW TEMPLES, STREAMLINED ENDPIECES, BEADED ENGRAVED EYEWIRE and the PERMANENTLY ATTACHED SIDESHIELDS. Your nearest AO Safety Products Representative can supply you with this top quality eye protection.

Quick Facts

- NEW TEMPLES — Insulated from center to ear end with *brown* tubing that will not discolor and will outlast temple. Easily-adjusted, perspiration-proof, oval-shaped. Both temple and endpiece screws are patented AO "Evertite"— keep tight yet remove quickly when desired.
- STREAMLINED ENDPIECES — On-center with a wide bearing surface to minimize temple drop. Beaded engraving and flush screw heads for attractive appearance.
- BEADED ENGRAVED EYEWIRE—Contributes looks with ruggedness. Eyewire is flat, has engraved bar across top. Smaller sideshield flange has rolled edges.
- SIDESHIELDS — Permanent attachments to eyewire save time and an operation when replacing lenses.
- LENSES — FV-3 shape drop eye — accommodates clear or calobar regular Super Armorplate or 6 curve Super Armorplate lenses. Two eye sizes: 44 and 47 with or without side shields.

American Optical COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES



Over 5 times around the world

TO MAKE FREIGHT TRUCKS BETTER, SMOOTHER

● Thanks to the A.S.F. Service Laboratory, freight car truck performance is *now* an open book. Since 1940, this unique fact-finding train has traveled more than 135,000 miles on nearly 900 test runs, to bring users and manufacturers alike a *true picture* of truck operation. The Log, through 1949, appears below.

Virtually *nothing* was known of freight-truck behavior at high speeds until American Steel Foundries introduced the Service Laboratory. Then the value of this *on-the-job* research was quickly demonstrated. Early in 1943—after the Service Laboratory had made 181 tests, covering 25,312 miles—the *first* easy-riding A.S.F. Ride-Control Trucks went into use carrying airplane wings from Detroit to the Coast. Pilot runs were made in freight trains, but—by fall—these smooth-rolling cars were operating in *regularly scheduled fast passenger service.* Never before had any freight truck been entrusted with such a responsibility, nor had any *performed* so beautifully.

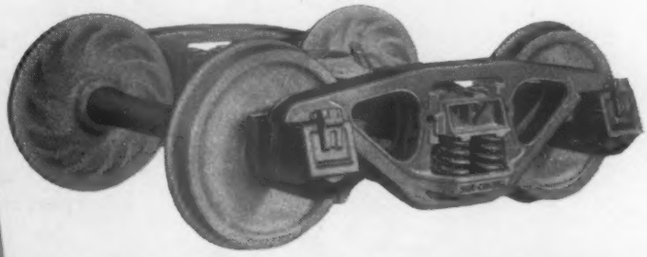
This, however, was just the beginning. Throughout the years that followed, the Ride-Control Truck was continually tested—at *all* speeds and car loadings; over *all* kinds of track; with *all* lengths of spring travel—and improved wherever possible. And, for the past three summers, the Association of American Railroads has operated the A.S.F. Service Laboratory for its own independent investigations. *Today,* the comparative performances of freight car trucks have been carefully charted for the guidance of makers and users.

Freight-truck progress in the last ten years is a *major miracle* of railroading. Long-travel springs, with which Ride-Control Trucks have been equipped from the first, now are specified for *virtually all* new cars. Simple, functional design has become a *universal goal* because A.S.F. pointed the way. And easy-riding, low-maintenance Ride-Control Trucks are saving countless dollars for both *carriers and shippers* because there is no letup in the A.S.F. search for the new that is better . . . *that is right.*

LOG OF THE A.S.F. SERVICE LABORATORY

RIGHT-OF-WAY USED	WHERE RUN	NO. OF RUNS	DURATION OF TEST	TOTAL MILEAGE
C. M. St. P. & P. Missouri Pacific New York Central Santa Fe	Milwaukee-Portage	56	8/22-11/26, '40	9,632
	N. Little Rock-Bald Knob	72	1/14-5/2, '41	7,200
	Englewood-Elkhart	53	6/15-10/28, '42	8,480
	Chicago-Chillicothe	1	4/22/43	260
	Chicago-Kansas City	1	4/29/43	900
	Chicago-Ft. Madison	4	5/1-5/20, '43	1,880
	Proviso-Clinton	32	2/28-4/21, '44	3,968
	St. Paul-Duluth	34	5/7-9/19, '44	10,880
C. & N. W. Great Northern Santa Fe	Chicago-Ft. Madison	40	10/30-12/14, '44	8,800
	Chicago-Ft. Madison	96	3/19-12/7, '45	21,120
	Oakland-Sacramento	35	2/20-4/26, '46	6,020
	Chicago-Chillicothe	20	7/8-8/20, '46	2,340
Southern Pacific Santa Fe	Chicago-Ft. Madison	12	9/2-10/1, '46	2,640
	Clinton-Gilman	97	4/25-11/6, '47	12,028
	Grand Rapids-Grand Ledge	22	1/8-2/6, '48	2,200
Illinois Central Pere Marquette G. M. & O. *Illinois Central Illinois Central *Illinois Central	Venice-Springfield	22	6/10-7/3, '48	1,892
	Clinton-Gilman	78	7/27-11/13, '48	9,672
	Clinton-Gilman	72	3/29-7/1, '49	8,928
	Clinton-Gilman	81	7/5-10/28, '49	10,044
	GRAND TOTALS	828	.....	128,884

*Conducted by the Association of American Railroads.



A-S-F *Ride-Control*® TRUCK

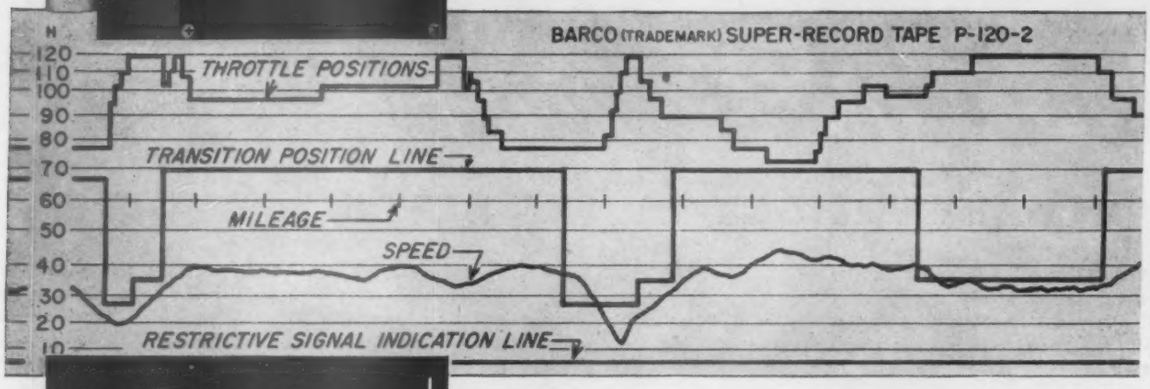
CONSTANT FRICTION CONTROL
LONG SPRING TRAVEL

AMERICAN STEEL FOUNDRIES

MINT MARK OF ● FINE CAST STEEL

ACCURACY, DEPENDABILITY

PROVED BY MILLIONS OF MILES OF SERVICE!



Helps You
GET THE MOST OUT OF YOUR DIESELS —OLD OR NEW!

BARCO RECORDERS

For Diesel and Steam Passenger, Freight, and Switch Engines

The accuracy and dependability of BARCO RECORDERS are unquestioned. A typical user* reports accuracy within 2% at 100 MPH after a million miles of service! This is the kind of performance you want and one reason why you should INSIST ON GETTING BARCO RECORDERS.

There are other equally important reasons. BARCO gives you the dependable, accurate records you need to insure efficient, profitable, safe operation of your equipment. When you consider the investment required for a locomotive, it does not pay to economize on the instrument that HELPS YOU GET THE MOST OUT OF YOUR INVESTMENT! *Let Barco give you the facts—ask for information.* BARCO MANUFACTURING CO., 1800M Winnemac Ave., Chicago 40, Illinois.

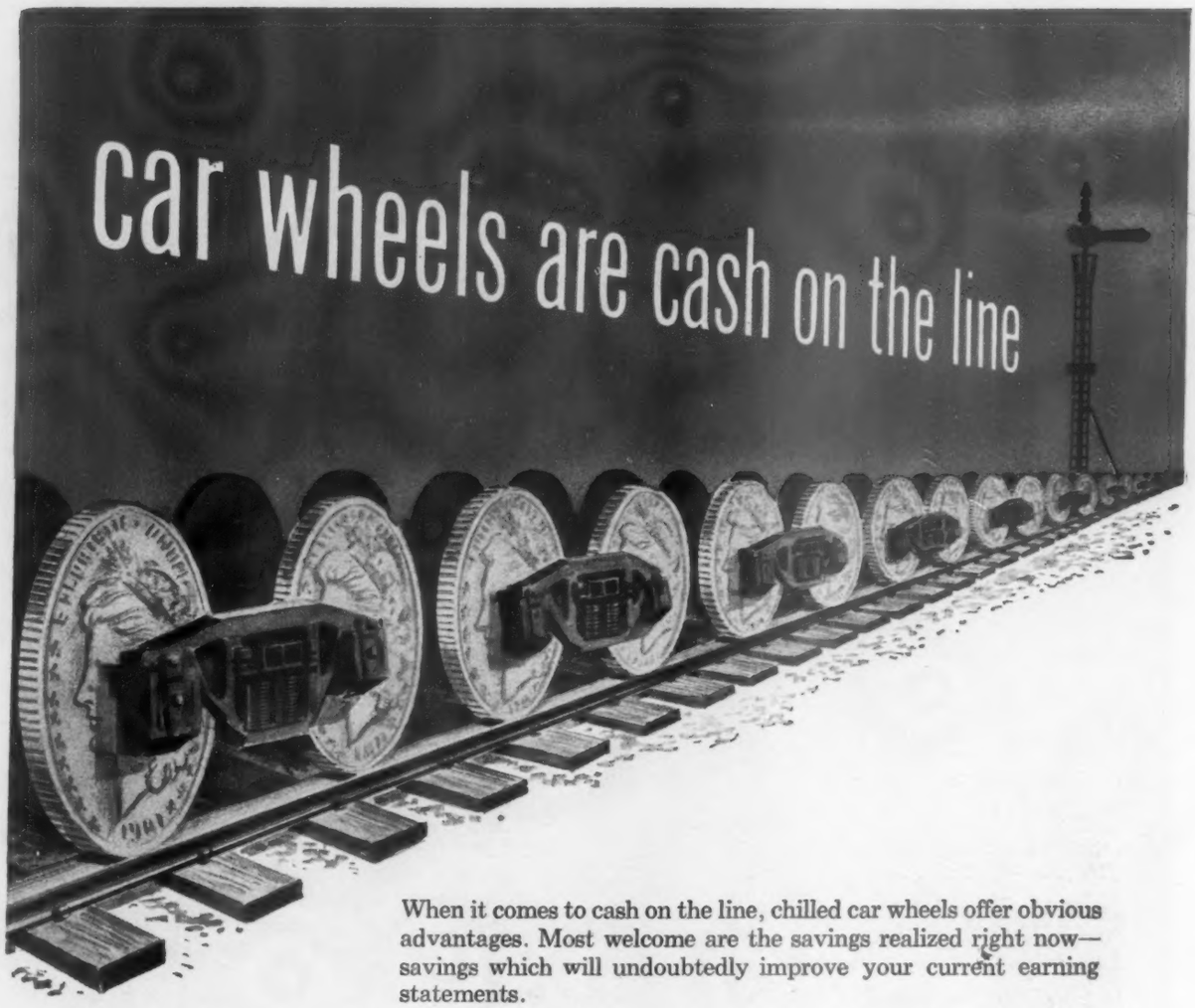
* Name on request.

Specify **BARCO**

THE LINE IS COMPLETE

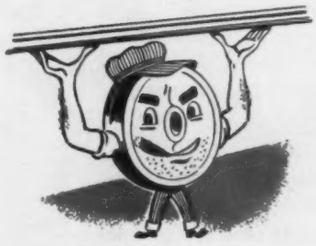
FREE ENTERPRISE — THE CORNERSTONE OF AMERICAN PROSPERITY

car wheels are cash on the line



When it comes to cash on the line, chilled car wheels offer obvious advantages. Most welcome are the savings realized right now—savings which will undoubtedly improve your current earning statements.

but... *how about the upkeep*



In addition to all-important first cost, chilled car wheels save you money all along the line. Reduced inventory, longer brake shoe life, less axle shock, reduced trackwork wear, easier mounting and unusually low exchange rates are added dividends from your car wheel dollar. And, at all times, you will appreciate the ready delivery of standardized, fully inspected chilled car wheels from any of the 25 AMCCW foundries, located strategically throughout the country.

Low first cost
Low exchange rates
Reduced inventory
Short haul delivery
Increased ton mileage
High safety standards
Complete AMCCW inspection
Easier shop handling

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 North Sacramento Boulevard, Chicago 12, Ill.

American Car & Foundry Co. • Southern Wheel (American Brake Shoe Co.)
Griffin Wheel Co. • Marshall Car Wheel & Foundry Co. • New York Car Wheel Co.
Pullman-Standard Car Mfg. Co.

There's a lot of MILEAGE in a ton of coal

Supplying both the civilian and military needs of this "nation on wheels" calls for the staggering total of 76 million tires a year! And they range from "pint-size" tires for your automobile to huge, heavy-treaded shoes for the tank-hauling Army truck in this photograph.

Making all this tough, long-wearing rubber—both synthetic and natural—takes plenty of low-cost heat and power. And most of that heat and power is produced from coal. Tire manufacture alone will take almost two million tons of coal this year.

The rubber industry and other vital defense industries, such as steel, railroads, chemicals and public utilities, need and get coals of particular kinds and grades. To supply them—and all coal customers—with a constantly improved product, the nation's progressive coal operators have built huge, modern coal preparation plants. The result? Increasingly *more* heat and *more* power from each ton of coal!

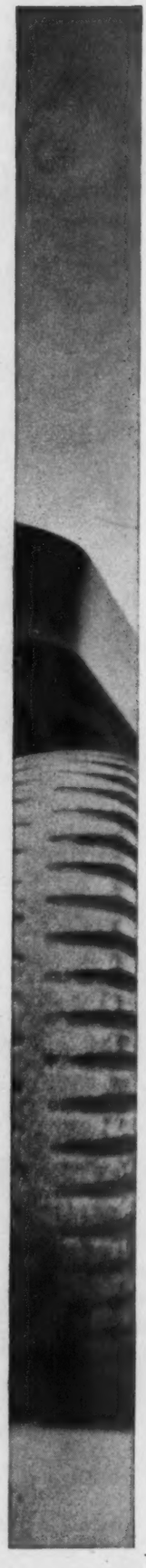
Yes, when it comes to meeting today's demands for fuel, coal is in a class by itself. For, alone among fuels, coal is available in virtually limitless quantities. And, thanks to enormous investments in new mine properties, research and mechanized equipment, the coal industry is better prepared right now than at any time in history to meet the increased demands of national defense!

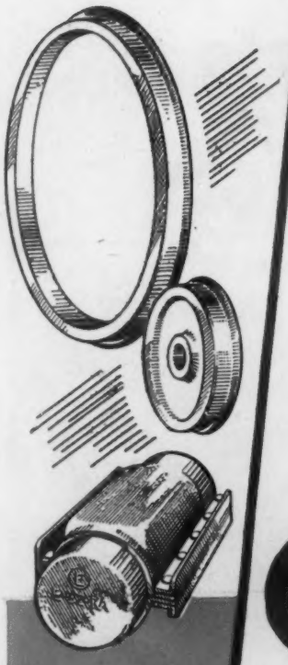
Business-managed coal companies, using private capital in the time-tested American way, have brought this country's coal industry to the highest peak of productive capacity the world has ever seen. Granted a continuing supply of essential equipment, transportation, and the full use of its trained, skilled man power, the industry will produce all the coal the nation may need—in peace . . . or in war.

BITUMINOUS COAL

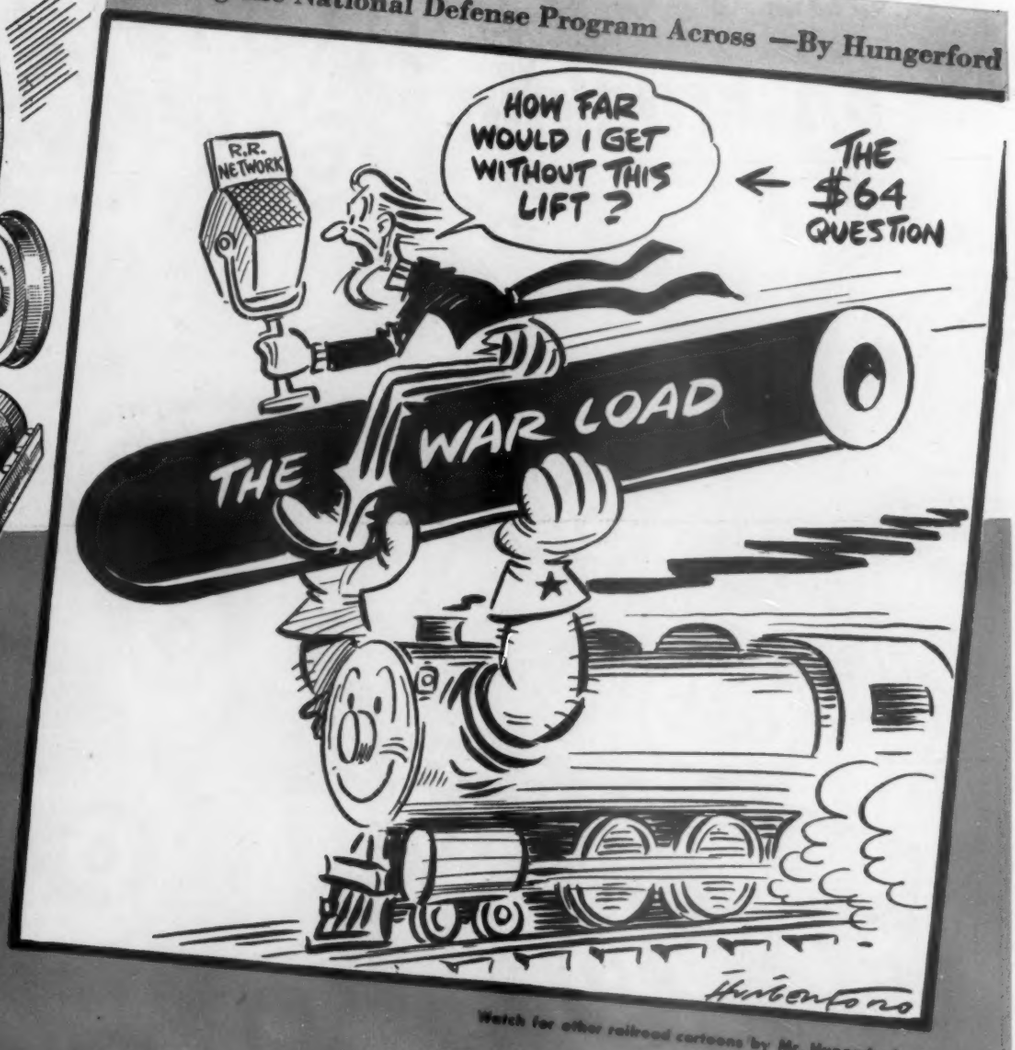
BITUMINOUS COAL INSTITUTE
A DEPARTMENT OF NATIONAL COAL ASSOCIATION
WASHINGTON, D. C.

Photo by Eugene Friduss taken at Aberdeen Proving Ground.





Putting the National Defense Program Across —By Hungerford



We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.

Watch for other railroad cartoons by Mr. Hungerford

Edgewater Steel Company

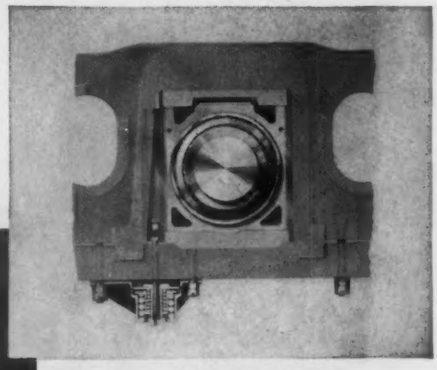
P. O. Box 478
Pittsburgh 30, Pa.

Serving America's Railroads with . . .

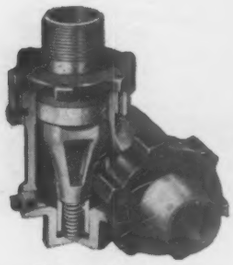
ROLLED STEEL TIRES
ROLLED STEEL WHEELS
DRAFT GEARS

use Franklin parts on Franklin devices

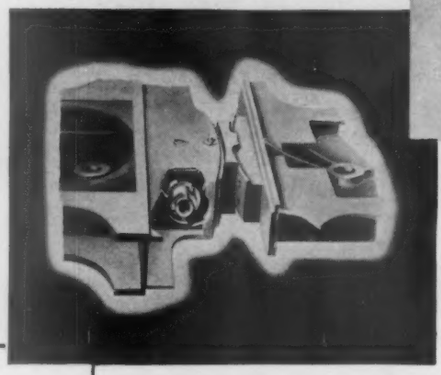
In order to obtain full efficiency from your Franklin devices, specify genuine Franklin parts in replacement. Franklin devices will always perform best when equipped with genuine Franklin parts made to interchangeable tolerances and of the correct materials.



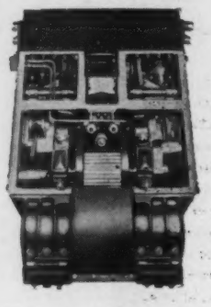
Automatic Compensators & Snubbers



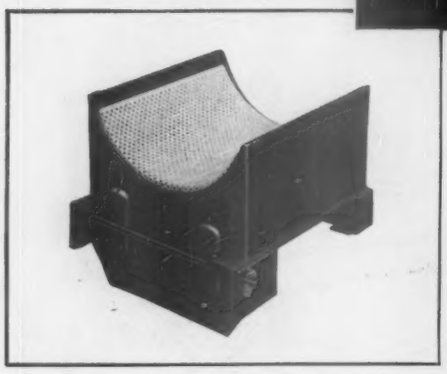
Sleeve Joints



Radial Buffers

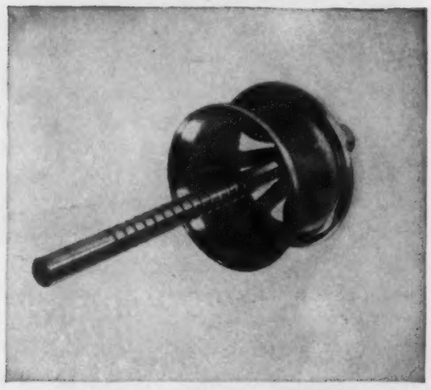


The Locomotive Booster



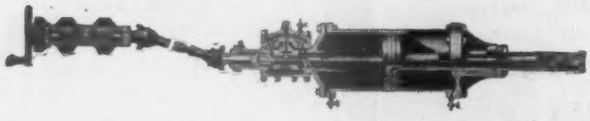
Driving Box Lubricators

Fire Doors



Franklin System of Steam Distribution

Power Reverse Gears



FRANKLIN RAILWAY SUPPLY COMPANY

A CORPORATION

NEW YORK • CHICAGO • TULSA • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
FIRE DOORS • DRIVING BOX LUBRICATORS • OVERFIRE JETS • JOURNAL BOXES • FLEXIBLE JOINTS • TANK-CAR VALVE

RAILWAY DISTRIBUTOR FOR N.A. STRAND FLEXIBLE SHAFT EQUIPMENT

TIDE WATER ASSOCIATED Salutes...

the Lehigh Valley Railroad's New Diesel-Electric Tug Fleet

The most modern tug fleet in New York Harbor... part of Lehigh Valley's forward thinking in supplanting outmoded equipment with faster, more economical motive power on both land and water.

Tide Water Associated is proud that the Lehigh Valley Railroad selected Tycol Diesel oils and fuels to service these outstandingly fine boats.

Thoroughly familiar with the problems involved in Diesel engine operation, Tide Water Associated has worked uninterruptedly for many years to develop new and better lubricating oils and fuels for more efficient and economical operation.

There is a complete line of Tycol lubricants... over which Tide Water Associated has complete control... from drilling field, through transportation to refineries, where only the most advanced refining processes are employed. This complete control enables Tide Water Associated to produce exceptional high-quality, specialized oils that provide peak efficiency and lowest operating costs.

For example, the new Tycol Adeltran Oils were developed expressly to meet the specific needs of railroad, and certain marine and stationary Diesel operation.

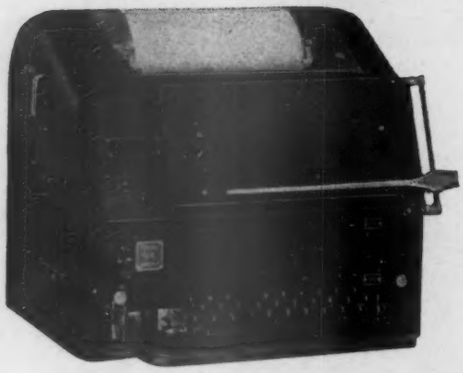
Your nearest Tide Water Associated office will gladly help you select the lubricant... or fuel oil... best suited to the requirements of your particular operation.

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C. • Pittsburgh • Philadelphia • Chicago
Detroit • Tulsa • Cleveland
San Francisco • Toronto, Canada

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE - NEW YORK 4, N. Y.

For efficient printed communications



. . . the TELETYPE line is complete

IN the past few years, many leading railroads have modernized their communications systems with Teletype to assure utmost dependability and flexibility.

No matter what *your* road's needs may be, you'll find equipment to meet them in the *complete* Teletype line. The partial list of products at right suggests the wide range of equipment available.

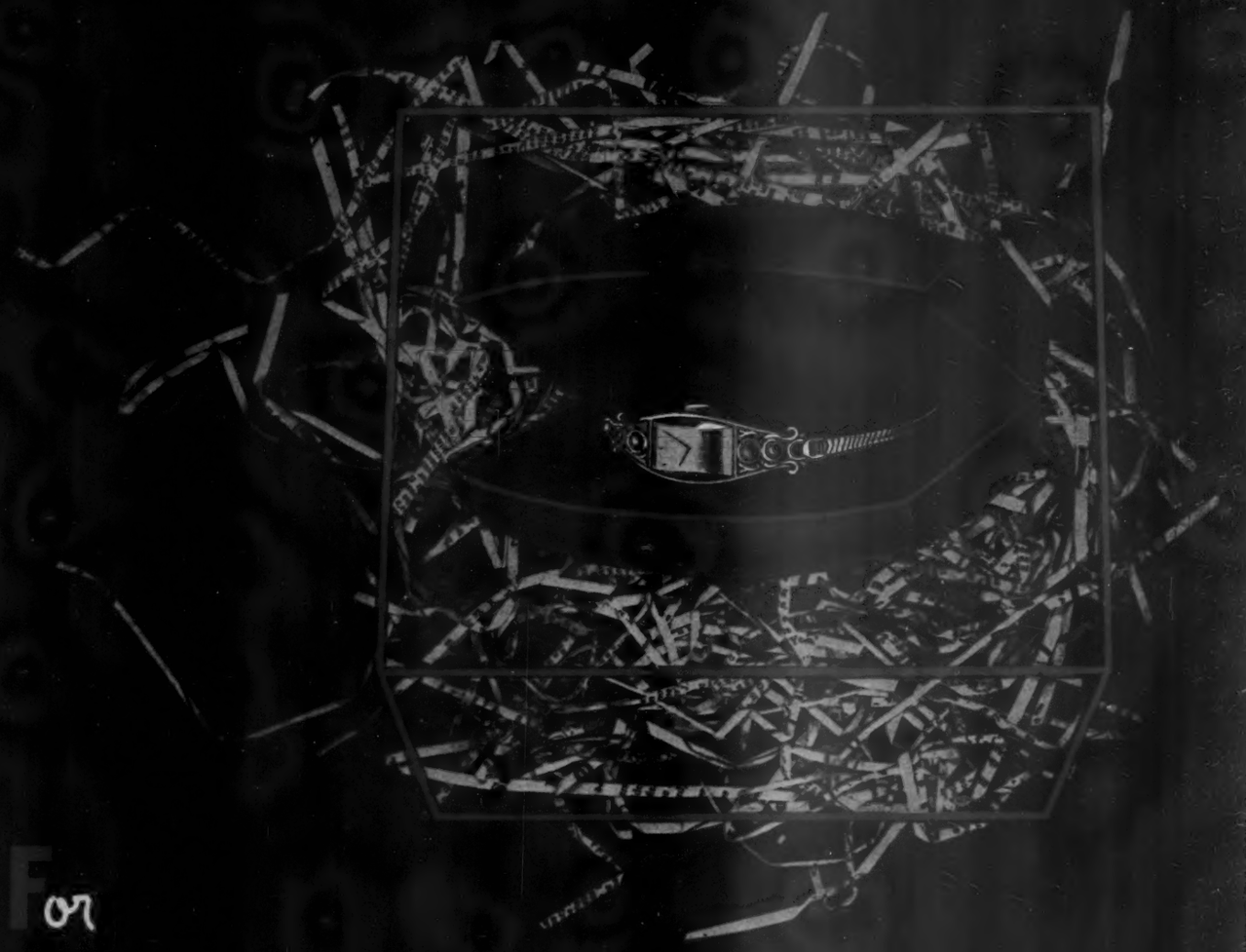
Teletype engineers will gladly study your communications problems and show you how to get the most out of a Teletype system. Write to:

Teletype Corporation, 1400 Wrightwood Avenue
Chicago 14, Illinois

A partial list of TELETYPE products

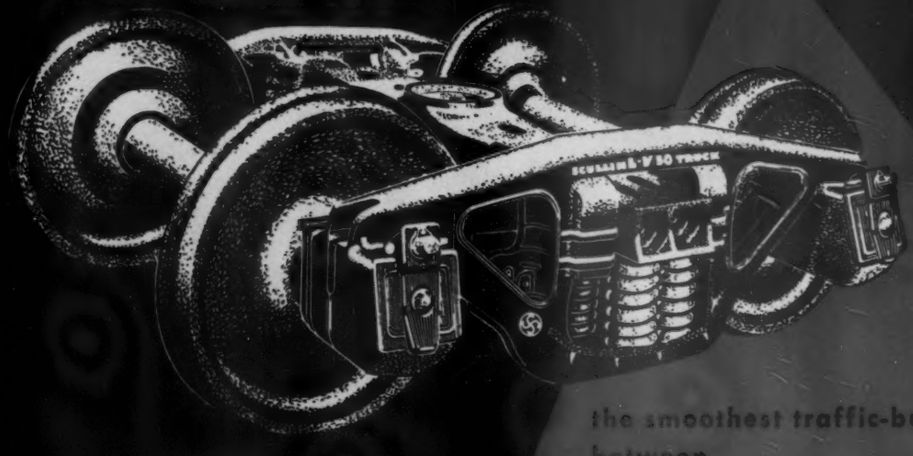
- Apparatus Cabinets
- Apparatus Consoles
- Display Copy Printers
- Distortion Test Sets
- Duplex Equipment Sets
- Extensors
- Facsimile Printers (Type 17—facsimile pattern)
- Lightweight Tape Printers
- Line Relays
- Message Ticketers
- Message Numbering Systems
- Monopulse Printers
- Multiple Transmitters
- Numbering Transmitter Distributors
- Page Printers (5-Unit) (6-Unit)
- Paper Winders
- Party Line Station Selectors
- Perforator—Transmitter Units
- Perforators (5-Unit) (6-Unit)
- Perforator Tables
- Portable Test Sets
- Printer Silencing Consoles
- Printer Tables
- Rectifiers
- Regenerative Repeaters
- Reperforators (Typing) (5-Unit)
- Reperforators (Non-typing) (5-Unit) (6-Unit)
- Reperforator Tables
- Reperforator—Transmitter Combination Units
- Reperforator Transmitter Tables
- Receiving Apparatus Tables
- Sequence Selectors
- Stock Quotation Tickers
- Stroboscopic Signal Distortion Test Sets
- Tape Perforators
- Tape Printers
- Tape Winders
- Transmitter Distributors (5-Unit) (6-Unit)
- Transmitting Apparatus Tables
- Transmitting Receiving Tables
- Utility Cabinets

TELETYPE
REG U.S. PAT. OFF.
CORPORATION
SUBSIDIARY OF
Western Electric Company
INCORPORATED



For
extra-protection
of your "extra-fare" freight... SCULLIN L 50 V TRUCKS

LATERAL VERTICAL
CUSHIONED MOTION



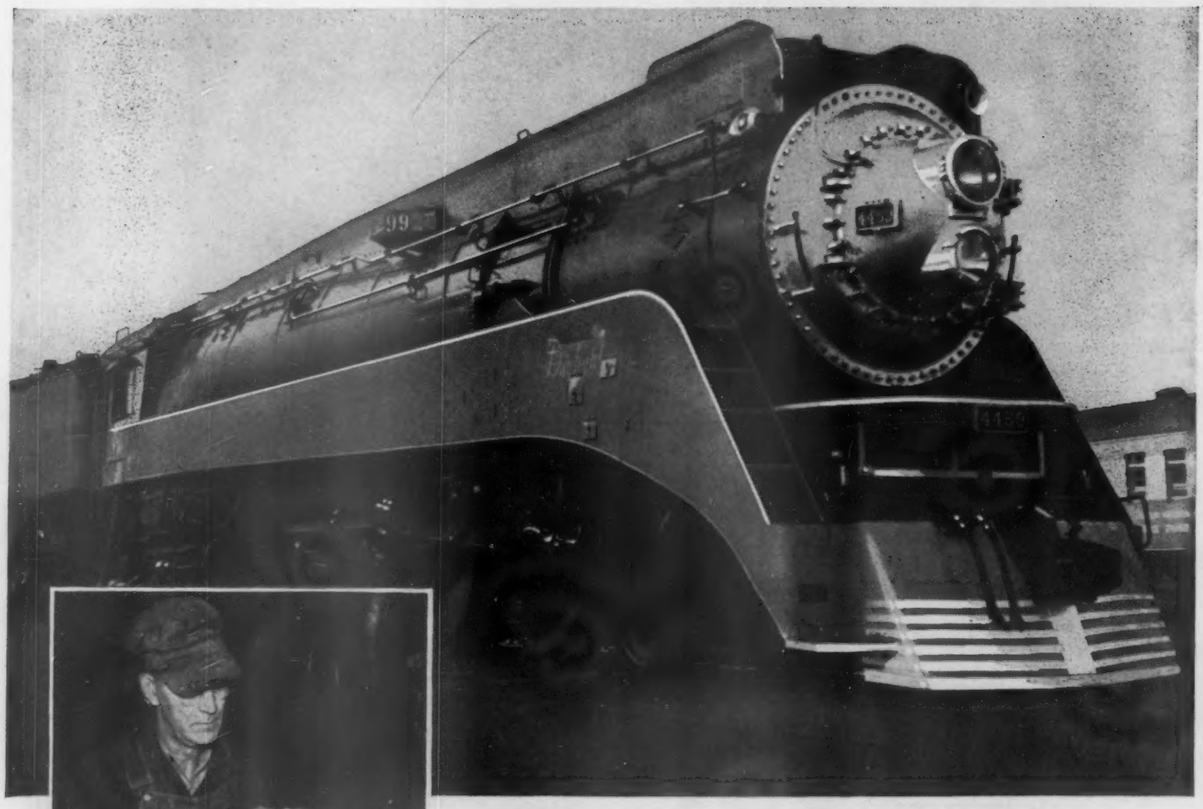
STEEL CASTINGS MANUFACTURER

the smoothest traffic-builder
between
LCL and your rails

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

NEW YORK • CHICAGO • CLEVELAND • BALTIMORE • RICHMOND, VA. • MEXICO CITY, D. F.



40 TIMES AROUND THE WORLD . . .

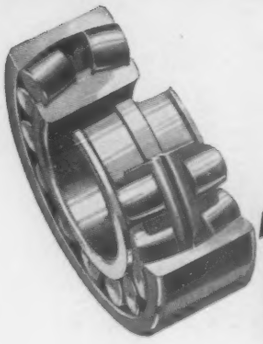
And Never A Bearing Problem

The Southern Pacific's Engine No. 4459 is now a member of one of the most exclusive clubs in the world . . . the million-plus miles locomotives. She rolled up that tremendous mileage on the run between Los Angeles and San Francisco, and she rolled it up with the same set of SKF Spherical Roller Driver Bearings. Records like this are testimony of the complete dependability of SKF Ball and Roller Bearings. They're proof of inherent ability to withstand wear, radial, thrust and combined loads and misalignment. This combination is the direct result of SKF's strict control of every phase of manufacture.

Again, SKF has proved ability to put the right bearing in the right place. **SKF** INDUSTRIES, INC., PHILADELPHIA 32, PENNSYLVANIA—*the Pioneers of the Deep Groove Ball Bearing—Spherical Roller Bearing—Self-Aligning Ball Bearing.*

7134

SKF
JOURNAL BOXES AND BEARINGS



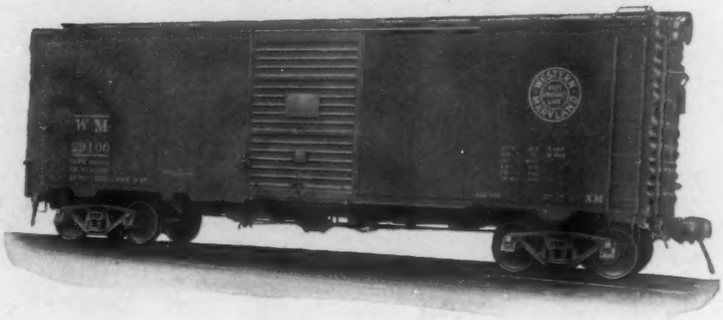
8 REASONS WHY **SKF** IS PREFERRED BY ALL INDUSTRY

Integrity — Craftsmanship — Metallurgy — Tolerance Control

Surface Finish — Product Uniformity — Engineering Service — Field Service

PRESSED STEEL CAR

the BIG PAYLOADS...



go, naturally, to the most efficient carriers. Worn out or obsolete freight cars that spend too much time "in the shop" cut down your volume of traffic . . . and cut down your profit on that volume. Replace them now with new cars by Pressed Steel Car Company.

Custom built or standard—'Pressed Steel' cars, whether they are box cars, hopper cars, gondola cars, or other types are designed and engineered by men who *know* railroading. That's why these modern cars keep your operating and maintenance costs down, payloads rolling longer, and your profits higher.

Pressed Steel Car Company, Inc.

6 No. Michigan Ave.
CHICAGO 2

NEW YORK 17
230 Park Ave.

PITTSBURGH
1st Nat'l Bank Bldg

ST. LOUIS 2
314 No. Broadway

MAXIMUM

PROTECTION

in all respects

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

Over 98% of the cars in freight carrying service are A.A.R. construction and over 96% have Friction Draft Gears.

2498

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

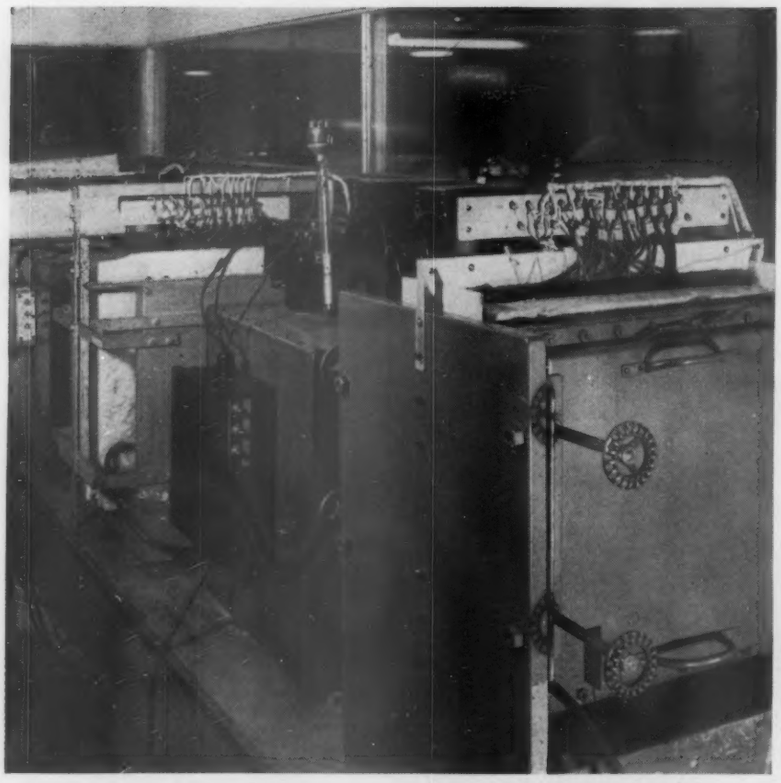
. . . and here's how AAR Solid Bearings help make possible unrestricted interchange

IN RAILROADING it's give and take. Your cars are used on practically every railroad in the country. And rolling stock from any other road is equally at home on *your* lines.

That's *unrestricted interchange.* It means Brownsville to Boston without a car change for lading. It puts over 225,000 miles of main-line track at every shipper's doorstep. It's one big reason why our country has grown so great and so fast.

The AAR solid bearing assembly has helped to make it so. It's a *simple standard:* lowest in first cost, operation, and maintenance—unrestricted as to speed and load—with an unequalled record for dependability in rigorous railroad service. No other type of bearing can match that kind of performance!

Magnus Metal Corporation, Subsidiary of National Lead Company, 111 Broadway, New York 6, N.Y., or 80 E. Jackson Boulevard, Chicago 4, Ill.



At the Fiberglas Research Laboratories three standard hot plates are in 24-hour use, measuring the thermal conductivity of Fiberglas products as they come from production lines.

Insulation Progress

From One of America's Great Research Laboratories

America's eating habits are changing. New means are needed to implement the change. New products, or improved old ones, must pace the advance. In the insulation of food in transport, the job of pushing back the technical frontiers is accepted as a challenge by the great Research Laboratories of the Owens-Corning Fiberglas Corporation.

Here the "candidate" products are tested. Here standards are set, and exceeded. Here the glass fiber product of tomorrow is proved.

No matter what insulation product you buy that contains a Fiberglas* material, its glass fiber in that same fabricated form has passed the test of science and experience here at one of America's great industrial laboratories. For details and samples, phone or write Owens-Corning Fiberglas Corporation, Dept. 21-L1, Toledo 1, Ohio.

OWENS-CORNING FIBERGLAS

*Fiberglas is the trade-mark (Reg. U.S. Pat. Off.) for a variety of products made of or with glass fibers by Owens-Corning Fiberglas Corporation.

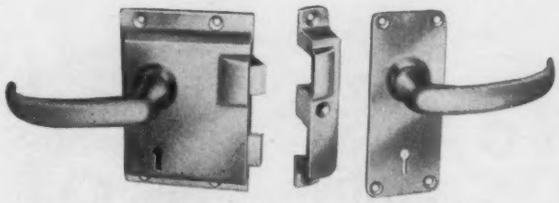
FIBERGLAS IS IN YOUR LIFE...FOR GOOD!

Adlake Hardware and Fixtures Combine *Beauty* and **Utility** in Every Installation

Adlake Hardware and Fixtures are handsomely designed in both traditional and modern styles to harmonize with all types of coach furnishings. Their smart good looks actually enhance the beauty of other appointments.

What's more, every piece of Adlake Hardware is sturdily constructed of the finest materials for a lifetime of service. All pieces are available in your choice of finishes.

Adlake TRADE MARK

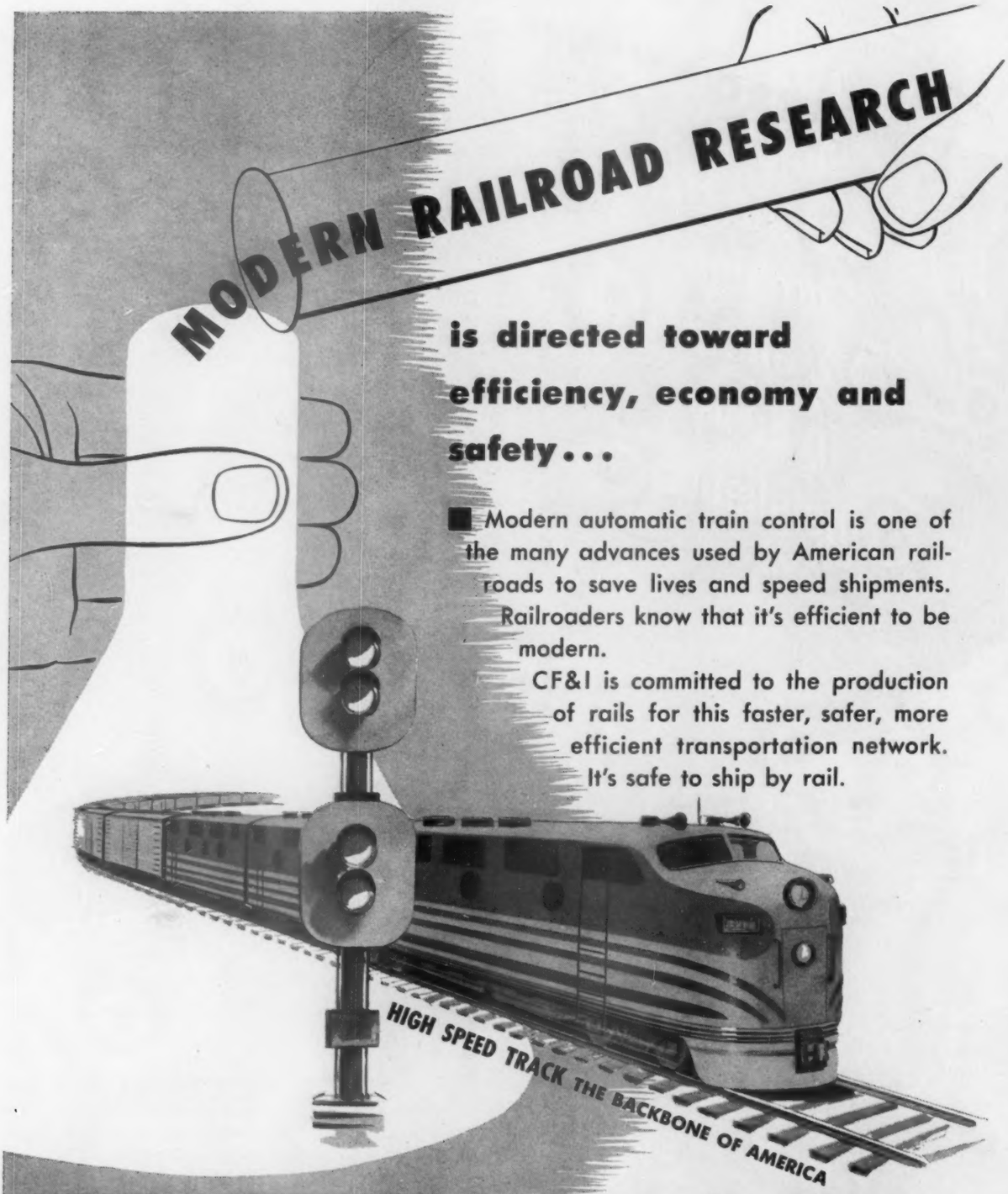


For complete information, write for our new hardware catalog. Address The Adams & Westlake Company, 1109 N. Michigan, Elkhart, Indiana. No obligation, of course.

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

Manufacturers of Adlake Specialties for the Railway Industry


MODERN RAILROAD RESEARCH
is directed toward efficiency, economy and safety...
Modern automatic train control is one of the many advances used by American railroads to save lives and speed shipments. Railroaders know that it's efficient to be modern.
CF&I is committed to the production of rails for this faster, safer, more efficient transportation network. It's safe to ship by rail.
HIGH SPEED TRACK THE BACKBONE OF AMERICA

The Colorado Fuel and Iron Corporation, Denver

A PRODUCT OF CF&I

CF&I RAILS AND FASTENINGS

Build with Corrugated Transite...

This diesel engine house shows how Corrugated Transite is used in combination with brick and glass to provide a virtually maintenance-free exterior... at low cost.

Not even corrosive fumes and smoke can affect the long life of Corrugated Transite roofing and siding.

...for low-cost, low-maintenance diesel shops

LOOK TO CORRUGATED TRANSITE*—an "Old-Timer" on many leading railroads—if you want diesel shops that defy fire, weather and corrosive fumes, yet cost less to build.

This time-tested Johns-Manville product is made of asbestos fibres and cement molded under pressure into tough, durable monolithic sheets. It is rotproof, rustproof, and fireproof... never requires paint or other preservative treatment... is virtually maintenance-free. And, important in structures housing diesel equipment, it will not absorb oil-laden exhaust fumes which might create a fire hazard.

Sheets of Corrugated Transite speed construction, too, for they come from 3 to 11 ft. long, 42" wide... thereby cover large areas quickly. They are easy to cut or drill, require only a minimum of framework, can be readily fastened to steel or wood.

Corrugated Transite is equally adaptable for roofing or siding—on either new or remodeled structures. It can be used alone, or in combination with other materials such as brick, glass or stone.

Why not look into the many possibilities for savings by using Corrugated Transite in the construction of housing for your diesel equipment? Further information is available in brochure TR-45A... yours for the asking. Just write to Johns-Manville, Box 290, New York 16, New York. In Canada: 199 Bay Street, Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

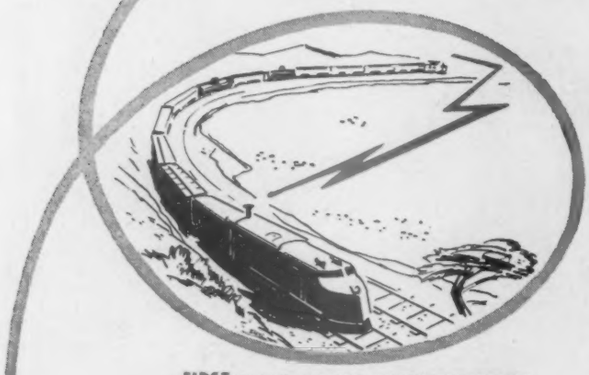
Johns-Manville 92 YEARS OF SERVICE TO TRANSPORTATION

BENDIX RADIO

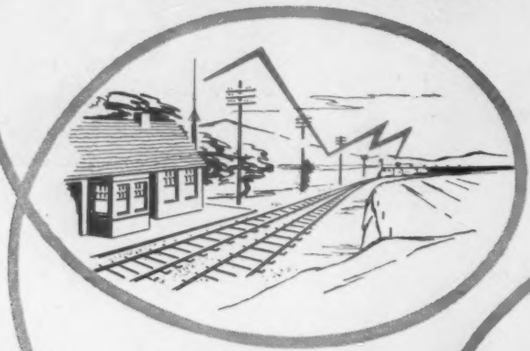
REG. U.S. PAT. OFF.

FIRST NAME
IN RAILROAD RADIO

One Sure Way to Cut Operating Costs!



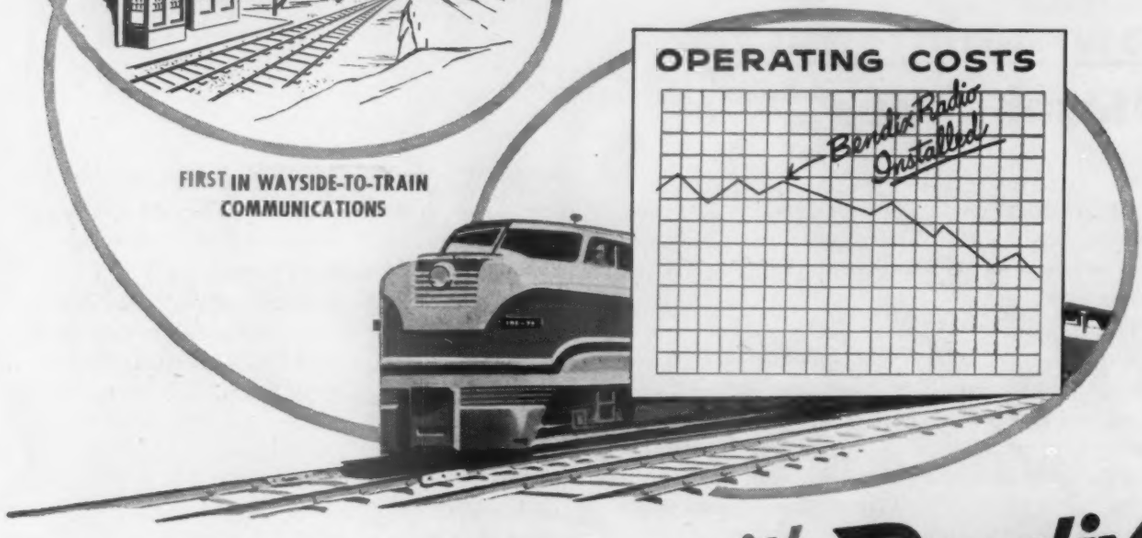
FIRST IN END-TO-END COMMUNICATION



FIRST IN WAYSIDE-TO-TRAIN COMMUNICATIONS

Making a substantial *cut* in operating costs and at the same time actually *improving* your service sounds too good to be true, but it *is* true and it's being done by progressive railroads all over America. Actual records made by the railroads themselves prove that in only a few months Bendix Radio will save you enough to pay for the entire installation . . . and then go right on piling up savings all along the line through *closer teamwork* between yard, train, and wayside personnel. In addition, Bendix Radio equipment is compact, easily installed and the cost is far less than you would imagine. So, write today . . . get the facts and you'll get Bendix Railroad Radio.

NO OTHER MAJOR IMPROVEMENT
IS SO EASY OR COSTS SO LITTLE



Freight Travels Faster with Bendix Radio

BENDIX RADIO DIVISION of Bendix AVIATION CORPORATION

BALTIMORE 4, MARYLAND

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

Diesel switchers benefit by . . .

● The Diesel switchers at Inland Steel's Indiana Harbor plant haul punishing loads of slag, ore, and steel on a 'round-the-clock schedule. On this difficult operation, excellent maintenance practices and the use of STANDARD HD Diesel Oil have kept engine availability high and upkeep at a minimum. An outstanding benefit of effective lubrication was revealed recently when a veteran Electro-Motive engine was completely overhauled for the first time in 13½ years of service.

The crankshaft in this Diesel had never been removed. Now, after 92,484 hours of operation, it showed no more than .008-inch wear on any of the main bearings and only .006-inch wear on any of the connecting-rod bearings.

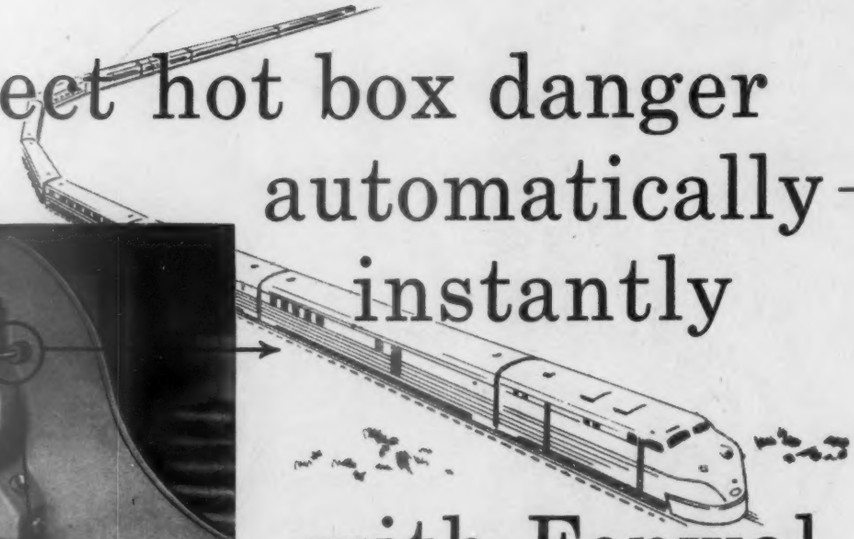
More than 60 railroads now use STANDARD HD Diesel Oil on their heaviest passenger and freight runs. This acceptance indicates the ability of this truly heavy-duty oil to provide effective lubrication for all types of Diesel locomotives. Make that your basis for investigating STANDARD HD Diesel Oil.

STANDARD HD
TRADE MARK
Diesel Oil

Write Standard Oil Company (Indiana), 910 S. Michigan Avenue, Chicago 80, Illinois.

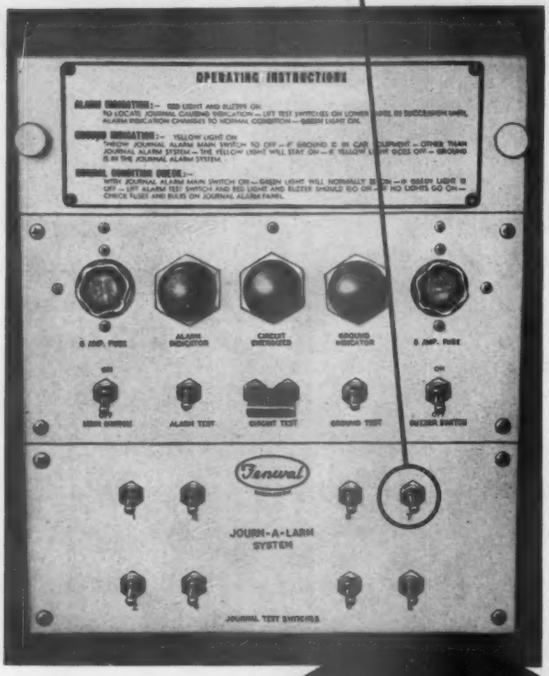
STANDARD OIL COMPANY (INDIANA) STANDARD

Detect hot box danger automatically—instantly



Typical THERMOSWITCH® and Cable installation. Low-cost maintenance — requires no special knowledge or equipment.

with Fenwal JOURN-A-LARM System



Control panel unit provides immediate detection and location of overheated bearing. Switches are numbered to correspond with wheel number of car.

APPROVED BY LEADING RAILROADS. The Fenwal JOURN-A-LARM System automatically detects and warns of hot box danger. A mere flip of a switch on the JOURN-A-LARM control box in the car instantly identifies the overheated bearing. Eliminates need for train crews to check individual bearings *outside* the car.

This unusual system — continually monitored through a failproof circuit — automatically gives a visible, audible warning inside the car when bearing heat exceeds specified temperature. Nerve centers of the JOURN-A-LARM are the Fenwal THERMOSWITCH® thermostats located in each bearing. Unique, highly sensitive, vibration-proof THERMOSWITCH mechanism assures positive action under every operating condition.

Fenwal THERMOSWITCH thermostats are also used for Car Heating, Air Conditioning, Diesel Overheat Detection. Write for bulletin. Fenwal Incorporated, 1712 Pleasant Street, Ashland, Mass.; 11 South Burlington Ave., Los Angeles 4, Cal.

Fenwal

Temperature Control Engineers

JOURN-A-LARM

SENSITIVE . . . *but only to heat*

AN IDEAL

Christmas Gift

FOR THE PROFESSIONAL RAILROADER...

Mail this coupon today!

RAILWAY AGE
30 CHURCH STREET, NEW YORK 7, N. Y.

PLEASE SEND RAILWAY AGE EVERY WEEK THROUGHOUT 1951 TO:

Name .....
Address .....
City ..... Zone... State.....
Employed by ..... Title .....
Department .....

Sign gift notice from .....
Address .....

RATES:
Only subscriptions entered for railroaders will be accepted at the professional rate of $3 —all others are to be placed at the regular rate of $6 for one year.

☐ $3 payment attached
☐ $6 payment attached
☐ Bill me after service begins

(Above rates apply only in the United States and Canada)

Give a RAILWAY AGE subscription . . . or treat yourself this Christmas!

Give the best in railway information this Christmas—to your railway associates—and to yourself!

That's a year's subscription to *Railway Age*—the one publication that *guarantees* a steady stream of railway news breaks as they happen . . . late developments . . . what's going on . . . what's being planned . . . what's being done in every phase of railway activity.

Subscriptions entered for railroaders will be accepted at the professional rate of $3; subscriptions entered for non-railroaders are to be placed at the regular rate of $6 for one year. (Rates apply only in the United States and Canada.)

NOTE: Better mail the above coupon *now* — only 23 days left 'til Christmas!

RAILWAY AGE

30 Church Street, New York 7, N. Y.

Taken at Dayton, Ohio

LIMA-HAMILTON SWITCHERS

...on the

B&O

"We are pleased with the performance record of our Lima-Hamilton switchers. Maintenance costs to date have been quite satisfactory."

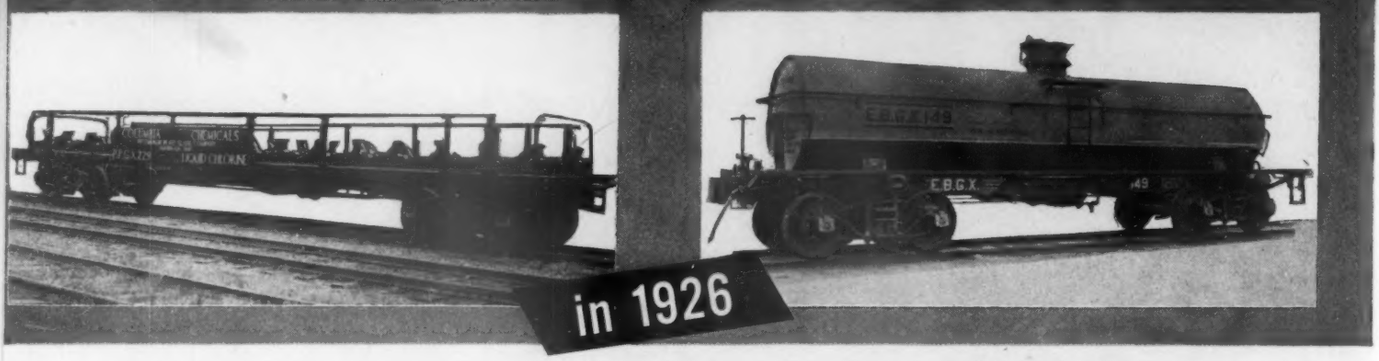
says the B & O

LIMA HAMILTON CORPORATION

LIMA LOCOMOTIVE WORKS **LIMA, OHIO**

A division of the Lima-Hamilton Corporation

In 1926 chlorine was shipped either in small container cars or 15-ton tank cars.



chlorine tank car capacity was 15 tons...

Today...there's a variety of GATX Chlorine Cars...

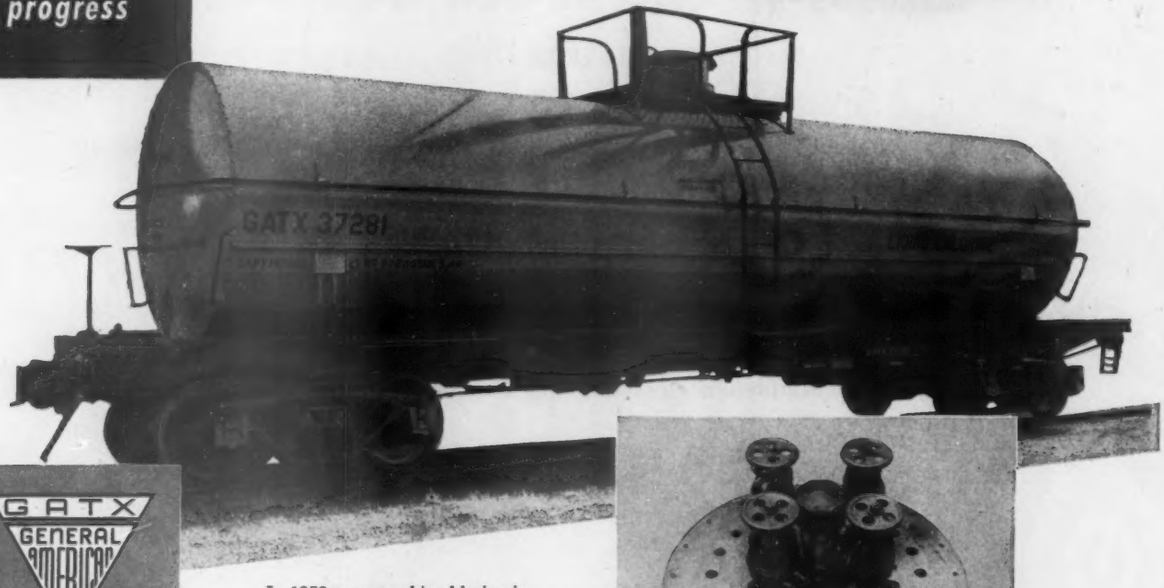
15 TONS

30 TONS

55 TONS

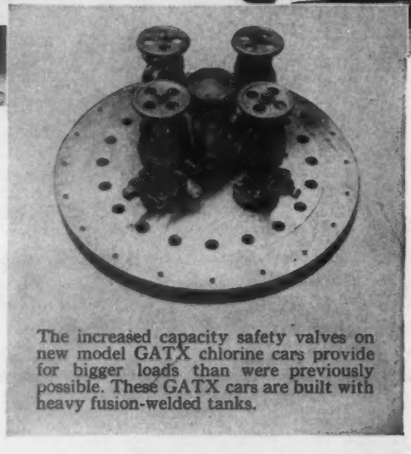
Bulk shipping keeps pace with chemical progress

Now you can ship chlorine more economically in the right size tank car for your needs. GATX helps widen your market for your other commodities, too, by providing safe, low cost transportation of bulk liquid chemicals in more than 200 types of specialized tank cars.



GATX GENERAL AMERICAN TRADE MARK

In 1950 you can ship chlorine in GATX cars of 15, 30 or 55-ton capacity. This variety of sizes permits you to make more economical, more convenient shipments.



The increased capacity safety valves on new model GATX chlorine cars provide for bigger loads than were previously possible. These GATX cars are built with heavy fusion-welded tanks.

GENERAL AMERICAN TRANSPORTATION CORPORATION
135 South La Salle Street • Chicago 90, Illinois

District Offices: Buffalo • Cleveland • Dallas • Houston • Los Angeles • New Orleans • Tulsa
New York • Pittsburgh • St. Louis • Seattle • San Francisco • Washington

Export Dept., 10 East 49th Street, New York 17, New York

THE RAILROADS ARE FORTUNATE IN THE QUALITY OF THEIR BIGGEST CUSTOMERS

This paper would like to "point with pride" to the railroads' biggest customers and the providers of much more than a majority of their gross revenues—the members of the National Industrial Traffic League. What other industry has such serious-minded and studious buyers to deal with? A *Railway Age* editor enjoyed the privilege of attending the recent annual meeting of the league at San Francisco, as reported in our last week's issue. It is a privilege not widely extended to non-members—carrier representatives being excluded—because it is the league's policy to deal with the carriers and others through standing and special committees, which receive approval from the full membership before progressing their affairs. The league's policy is sound. But every policy has its negative aspects and it is certainly regrettable that the railroad industry cannot have the benefit of the uplifting experience of watching their biggest customers hammer out on the anvil of free discussion the policies which will so largely determine the fortunes of the transportation business for a long time to come.

League sessions are something of a reporter's nightmare, because they involve important legislative action carried through a maze of parliamentary procedure which is not easy to follow—knowing that a large variety of complex and important actions must be summarized with great brevity. But this most recent meeting was both a memorable and moving experience, apart from the journalistic labor involved. It was a spectacular exhibition of economic and commercial statesmanship. Despite the fatigue of long, all-day sessions, lasting past 6 p.m., the league's members exhibited intellectual vigor to the end and, more important, stuck fast to their convictions —when comfort and convenience certainly must have been a temptation to horse-trading or the tabling of controversial topics. It would take a lot of looking to find another industry with customers like this.

Statesmanship at a Price

While most league memberships are held in the name of industries, the men who move its business are chiefly the officers in these concerns who are paid to obtain the best transportation service at the most advantageous price. It is not unlikely that the managements to whom these traffic officers report are often inclined to interpret "most advantageous" as a synonym of "cheapest"; it takes wisdom, experience and foresight to discern the difference. It is likely also that—lacking the familiarity of traffic managers with transportation regulation and

EDITOR . . .
James G. Lyne
EDITORIAL CONSULTANT . . .
Samuel O. Dunn
MANAGING EDITOR . . .
C. B. Tavenner
WESTERN EDITOR . . .
William H. Schmidt, Jr.
NEWS & FINANCIAL EDITOR . . .
Gardner C. Hudson
WASHINGTON OFFICE . . .
Walter J. Taft
Joe W. Kizzia
ELECTRICAL DEPARTMENT . . .
Alfred G. Oehler

TRAFFIC & TRANSPORTATION DEPARTMENT . . .
Robert G. Lewis
John W. Milliken
John S. Gallagher, Jr.
MECHANICAL DEPARTMENT . . .
C. B. Peck
E. L. Woodward
H. C. Wilcox
C. L. Combes
G. J. Weihofen
ENGINEERING DEPARTMENT . . .
M. H. Dick
Henry E. Michael
Norris V. Engman
Radford E. Dove

PURCHASES & EQUIPMENT . . .
Fred C. Miles
SIGNALING AND COMMUNICATIONS DEPARTMENT . . .
John H. Dunn
Maurice Peacock
WESTERN NEWS DEPARTMENT . . .
Arthur M. Cox, Jr.
ASSOCIATE EDITOR . . .
Charles Layng
LIBRARIAN . . .
Edith C. Stone
EDITORIAL ASSISTANT . . .
Elaine C. Farrar

promotion—not many of the managers to whom these traffic men report are greatly interested in the source of the cheapness they seek, taking rather the attitude (to corrupt Lord Tennyson): "Theirs not to reason why; theirs but to go and buy." Thus the men who attended the league's meeting do not enjoy the luxury of piety without good works. What they did and said will affect their employers' pocketbook. There is, in short, a price-tag on their statemanship. What is best for the long pull may not be the article with the cheapest price-tag on it at the time of purchase.

This being so, it is all the more remarkable that a majority of members present displayed a distinctly critical attitude toward transportation with faulty book-keeping—that is, that transportation with costs concealed in part by contributions from the taxpayers. They showed firmness of conviction in voting to continue to oppose the St. Lawrence Seaway; in throwing out a proposed motion against the toll principle of highway financing; and in voting down a report which would regard mail service—and parcel post in particular—as a public benefit with little regard to commercial principles. The league also turned down a proposal that railroad stations and terminal facilities in cities of 50,000 or over be purchased by government authority for purposes of subsidy and tax exemption, to even up "the glaring differences in treatment of the several forms of transportation." This decision of the majority was based, not on indifference to inequality, but on the conviction that "the proposal is a step in the wrong direction"; the subject committee promised to give continuing attention to the "inequities" by working at the problem from the other end—that is, from the approach of subsidizing nobody instead of subsidizing everybody.

Sound Economic Principles

It is notable that, of the men who argued on the floor in behalf of commercial principles and adequate user payments, and against further government aid projects, a large number represented concerns, regions or industries which would stand to net short-term gains from artificially reduced transport charges that would result from governmental assistance. And the most doughty of their number represented very large companies or regional interests.

This statesmanlike stand was not taken in the interest of "sweetness and light" toward the railroads or any other group of carriers. It was, indeed, noteworthy that the shippers who put up the most effective battle for establishing the transportation business on a firm commercial basis of self-support were the same men who, in other debates and reports, were most critical of the railroads' plant, operations and rate policies. In fighting for self-support in transportation these men were doing battle, not for the railroads as such, but for sound economic principles. The traffic manager who led the battle for an expensive national campaign against loss and damage by the railroads—on the ground that their present endeavors are inadequate—happens also to be one of the league's most outspoken critics of inequity in regulation and in governmental promotion of some forms of transportation. The man who most caustically attacked the common carriers' drive against private carriage is the individual who most eloquently advocated greater freedom in rate-making for the railroads. And he who raised the most thunder about the railroads' alleged failure to anticipate the country's needs and buy more freight cars also showed himself a champion of their inherent right to raise prices when their customers are raising theirs.

Ripe for a Program

In the league, as this paper saw it in action two weeks ago, the railroads have clear proof that their most influential customers are coming more and more to take the statesman's view that long-range interest comes first. Whatever their stand on public handouts may have been in the past, these shippers now clearly realize that continuance of the practice will drive out private investment; and some day will confront the shippers' own businesses with a government monopoly of transportation. It is also clear that the railroads should encourage this enlightened majority to carry this conviction to the minority of "short-range lookers" which still exists in the league and, more important, to the business managements to whom the industrial traffic managers report and with whom final decision rests.

In the shaping of a new and more realistic national transportation policy which, from all signs, is now in the works, the railroads can best serve the national interest by putting before the shippers a concrete plan for legislation which will remove the inequities of regulation and promotion which now threaten *all* private investment in transportation. The league has shown itself ripe for statesmanship. The railroads can scarcely afford to let their customers be more foresighted and socially responsible in such a matter than the railroads are themselves.

WHITTLING AWAY THE CAR SHORTAGE

Orders for 128,987 freight-train cars for domestic use were reported in *Railway Age* during the first eleven months of 1950. This exceeds the number of such cars ordered for domestic use in any *full year* since 1924 when, according to the American Railway Car Institute, 145,616 freight-train cars were purchased. Purchases by domestic railroads and private car lines of all types of equipment reported ordered during the first eleven months called for a total estimated outlay of $1,039,588,600. A tabulation of equipment orders reported in *Railway Age* in November and further details about equipment reported ordered during the first eleven months appear in this issue's Equipment & Supplies column.

WHAT IS WRONG ON THE LONG ISLAND?

This paper will not prejudge the circumstances which occasioned the disastrous collison on the Long Island Railroad on November 22, in advance of the conclusions of the inquiry being conducted by the Interstate Commerce Commission under the experienced leadership of Commissioner W. J. Patterson. Available evidence suggests, however, that the train which ran into the rear of the train ahead had come to a stop, at a signal which should have indicated "stop and proceed," approximately 3,516 ft. to the rear of the point of collision. If it be unequivocally established that this stop was actually made, than it would be logical to assume that the automatic signals were functioning properly. It appears, also, that there was an emergency application of the air brakes on the following train prior to the collision. This evidence, unless successfully contradicted—together with the stop at the signal—would establish that the motorman on the following train was neither dead nor incapacitated. If the signals were working properly and the motorman of the second train was not incapacitated, then the conclusion would follow that the accident resulted from failure by the motorman of the second train to operate his train under control, as required by the rules, after obeying a "stop and proceed" indication.

No Substitute for Judgment

There is no safety device which can serve as an effective substitute for the exercise of judgment on the part of an engineer or motorman, or compel unalterable obedience to the rules. Trains cannot be run without intolerable delays, unless mechanical safety devices permit some exercise of judgment by employees after the signals and safety devices have served their purpose of warning against imminent danger. The only way to make a train—or an airplane or an automobile— *absolutely* safe is to prevent it from moving at all. The purpose of signals and other automatic safety devices is to serve as a warning. The safety devices in use on the Long Island appear to have performed this function fully. No such device has yet been invented which will serve as a complete substitute for the human senses and brains. When such an invention comes along, trains can be run without enginemen or motormen.

Until that day arrives, apart from adequate signals and other warning devices, the most important contributor to safety of railroad operation will be, as it always has been, a highly alert, intelligent, disciplined and enthusiastic body of railroad employees—proud of their work and proud of their railroad. Taking the heart out of a corps of railroad employees by subjecting them to unreasonable criticism—treating them and their superiors as misfits and public enemies—is just about as sure a way as could be found of creating the hangdog listlessness, the despair, the worried preoccupation on the part of key employees which would invite carelessness and inattention.

It would not be unjust to suspect that the vicious attacks with which some politicians and publicists have persistently persecuted and "smeared" the Long Island Railroad may, at bottom, have had more to do with the November 22 accident, and the one last February, than any other one cause. Governor Dewey has appointed a commission of distinguished citizens to inquire into the Long Island's troubles and to recommend remedies for them. This commission should employ a competent psychologist and personnel expert—not only to establish the connection which very likely may exist between the poverty from which the railroad has long suffered and the problems of morale and discipline with which the management has had to contend—but also to bring to light the effect on the railroad's organization of the rabble-rousing abuse which has been leveled at it for so long.

Fruit of Over-Regulation

Hauling urban and suburban passengers is a sick business wherever found. It is sick from undernourishment. It is undernourished, not because of any fault of management, employees or owners—but as a result of joint action on the part of the regulatory authorities who limit rates, of the political authorities who have surrounded the business with inequitable competition, and of the taxing authorities who have taken their pound of flesh regardless of its lethal effect on their victim. The sickness of the commuter business is in large measure concealed in many places by other traffic which makes good its deficits. The Long Island has little such other business to absorb losses from handling commuters. The sickness of urban transit is concealed in some localities by partial or complete public ownership—bringing tax exemption and some covering of capital and even operating charges out of general taxation.

Practicable Remedies Needed

Governor Dewey's inquisitors will do a great public service—not only to New Yorkers but to every urban community in the country—if they will really get to the bottom of this affliction, and make known the basic causes and suggest practicable remedies. Let not these surgeons put a poultice on a cancer by seeking to make scapegoats of the trustees of this railroad. Urban and suburban transportation is a necessary and growing business. It is an anomaly that it should not be allowed also to be a profitable business—one which can readily secure a large inflow of new capital and offer attractive opportunities for able and ambitious young men. If Governor Dewey's inquirers will confront and answer the challenge presented by suburban transportation's unprofitability, then they may well find no serious problems of morale, of discipline, and of operating safety left to plague them. It would be no wonder if an undernourished organism were found to be subject to maladies against which the well-fed would be largely immune.

Aerial view showing the relocated line built to by-pass Tunnels 7 and 8 near Fairplay, Ohio, on the Pennsylvania's most direct route between Pittsburgh, Pa., and Columbus, Ohio. More than 122 deg. of curvature were eliminated at this location, with the maximum curvature being held to 2 deg. The arrows point to the westerly portals of Tunnels 7 (background) and Tunnel 8 (foreground), both of which were eliminated as part of the overall improvement

Tunnels By-Passed to Speed Oversize Cars

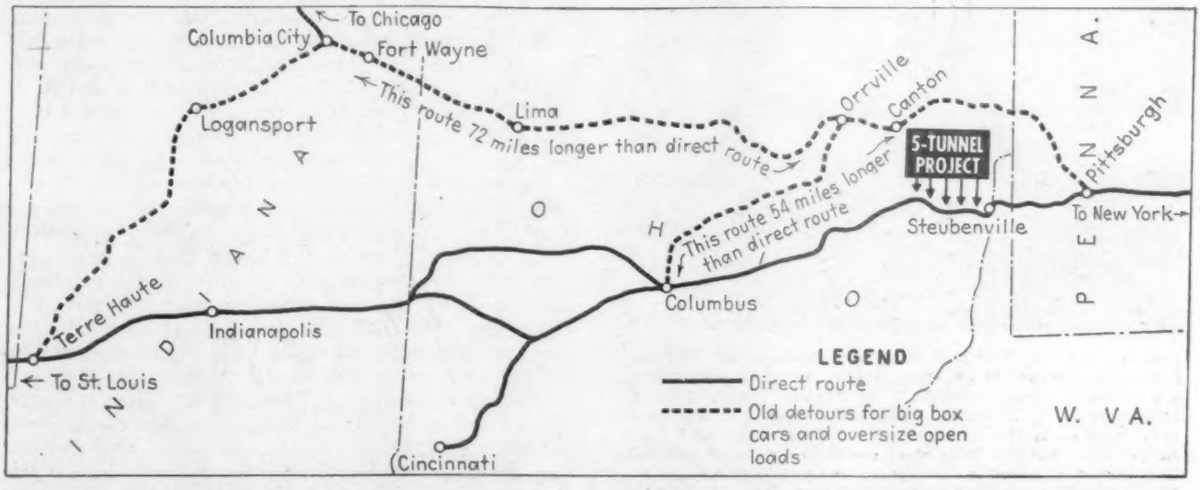
Full use of most direct route is permitted by $9 million project eliminating restrictions over Pennsylvania's Panhandle division

Shipments in large box cars, or oversize open loads on flat cars, moving over the Pennsylvania between Pittsburgh, Pa., and the St. Louis, Cincinnati and Louisville gateways, are now reaching their destination two days earlier on the average than previously. Commensurate earlier deliveries can also be expected for shipments moving between Pittsburgh and intermediate points such as Columbus, Ohio, and Indianapolis, Ind. These benefits to shippers and the railroad alike are brought about by the recent completion of a $9 million engineering project on a 37-mile stretch of track west of Steubenville, Ohio, on the road's Panhandle division. The major features of this project are the elimination of four tunnels having restrictive side and overhead clearances by the construction of new double-track lines around them, and the modernization of a fifth tunnel.

Effects Substantial Savings

Because of the restrictive nature of these tunnels many of the larger freight cars and unusually large shipments on flat and open-top cars could not be hauled through

The new line circumventing Tunnel 10 near Bowerston, Ohio, is shown in this aerial view. This line required the construction of what is considered one of the largest railroad cuts in existence. This cut has a maximum vertical height on one side of 220 ft. At the time this photograph was taken, the new eastbound main track had not been completed so that eastbound trains were still using the tunnel route and westbound trains were passing over the new line. Arrow indicates the point where the new tracks join the old at the easterly end of the eliminated tunnel



Before completion of the $9 million improvement project on the Panhandle division of the Pennsylvania near Steubenville, Ohio, restrictive clearance of the tunnels required that the larger freight cars and oversize shipments in open cars be screened out from trains and hauled over circuitous routes. Removal of the restrictions from the most direct route permits an average of two days to be saved in the delivery time of such cars and cuts operating costs

Approximately one-half mile of the large cut excavated for the new line circumventing Tunnel 10 is in excess of 100 ft. in vertical height. Berms, 26 ft. wide and having intercepting ditches 3 ft. deep, were constructed for cutting off the water falling on the slopes before it reaches the track ditches. The intercepting ditches, as well as the track ditches, were made 8 ft. wide at the bottom so that off-track equipment can be used for cleaning them

them. For this reason it was necessary for the railroad to screen out eastbound big freight cars and shipments when they reached Terre Haute, Ind., or Columbus, Ohio, and at Pittsburgh when westbound, and to haul them over a circuitous route which delayed their delivery by an average of two days. This procedure added about $992,000 annually to the railroad's operating expenses. To this annual cost was added another $252,000 for per diem charges necessitated by the detour. Also, the maintenance cost of the tunnels was excessive and, because of the limited clearances, constant checks had to be made of the track conditions within the tunnels to eliminate car sway and guard against damage to cars and ladings or to the sides of the tunnels.

Left to right: W. W. Patchell, general manager of the Pennsylvania's Central region; R. H. Miller, freight traffic manager of the Central region; G. J. Wadlinger, general agent in Pittsburgh of the Kansas City Southern; and C. E. Schlotterbeck, division traffic manager for the Great Atlantic & Pacific Tea Co., standing in front of a picture map of the $9 million tunnel elimination and track improvement job on the Panhandle division. The occasion was a luncheon at Chartiers Heights country club following an inspection tour of the project by special train. Nearly 200 traffic representatives of shippers and railroads attended the affair which formally opened the project on November 15

All of these costs, plus a saving of about $131,000 that the roads expects to effect by the reduction of curvature, make up a total of approximately $1,400,000 a year. Thus, the cost of the project constitutes a very attractive investment for the railroad. Not only will the cost be recovered in a little more than six years, but the elimination of the two-day delay is expected to result in increased traffic for the railroad. In addition, at least 168,000 car-days will be saved by eliminating the detour at a time when the railroads are critically short of box cars.

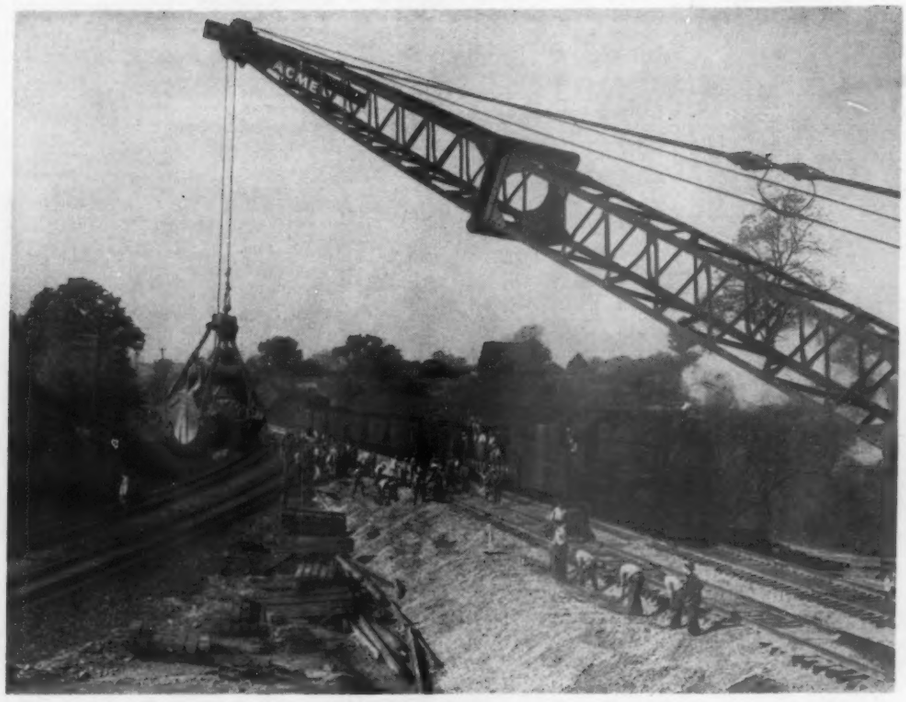
The five tunnels involved in this improvement project are designated as Tunnels 5, 6, 7, 8 and 10. The easterly tunnel, No. 5, not far from Steubenville, is 3,260 ft. long. This is the tunnel that was modernized instead of being by-passed like the others, because exploratory borings revealed that the most practical route for a new line would require a cut 3,500 ft. long and 385 ft. deep. This cut would have necessitated the removal of approximately 14 million cubic yards of material, with the lower part of the cutting being through solid sandstone rock exceeding 100 ft. in depth. Studies of the situation at this location indicated that, when traffic conditions become such that the modernized tunnel is no longer adequate, the solution will be to construct an additional single-track tunnel.

As it is, the cost of the work at Tunnel 5 was approximately $815,000 and involved changing the existing double track in the tunnel to a gauntlet track and the construction of a third track east of the tunnel. The new trackage constructed east of the tunnel is slightly more than two miles in length, is signalled in both directions and provides additional traffic capacity required because of the proximity to the yard at Mingo Junction.

Traffic Not Interrupted

Even though extensive grading was involved in by-passing Tunnels 6, 7, 8 and 10 with line changes, this plan, instead of eliminating the tunnels by open cuts on the same alinement, was adopted for several reasons. First, the "daylighting" of the tunnels would necessarily have required slow orders and interruptions to the normal flow of traffic during the construction period. It would also have added to the hazard of construction, and the progress of the work would have been hampered by the necessity of avoiding interference with traffic movements. With the new earth-moving equipment now available the large amount of grading required by the line changes was economically feasible. Furthermore, the by-passing of the tunnels would make it possible to introduce line improvements, resulting in the previously mentioned savings, and the elimination of the cost of maintaining the tunnels. Widening the existing cuts from the present width of 26 ft. to 30 ft. would also have involved construction hazards and excessive costs.

Tunnel 6, east of Reed, Ohio, is 472 ft. long. It was replaced with a line change through an open cut at a cost of about $1,828,500. Tunnels 7 and 8, located just east and west of Fairplay, Ohio, were replaced by a single line change at a cost of about $3,295,100. These two tunnels had a combined length of 2,328 ft. Tunnel 10, just west of Bowerston, Ohio, was replaced by line change through a large open cut at a cost of $2,865,000.



In building the new tracks on the relocated lines, stone ballast was applied in four lifts to a depth of 18 in. under the ties. Underlying this ballast is a 12-in. rolled layer of sub-ballast

This tunnel was 1,420 ft. long. Tunnel 9 had been eliminated in 1943.

The elimination of Tunnel 10 was the most spectacular engineering feat of the project. The cut on the line change at this tunnel is classed among the largest open cuts in railroad construction history. Approximately 40 per cent of the 6,200,000 cu. yd. of excavation required by all the line changes came out of the large cut at Tunnel 10. This material consisted of 25 per cent earth, 35 per cent shale, and 40 per cent sandstone, and more than 225 tons of dynamite were used in excavating it. The spoil from this cut alone was sufficient to fill up an entire valley.

The maximum vertical height of the new cut on the line change at Tunnel 10 is 220 ft. The maximum slope length on the deepest side is in excess of 300 ft. Approximately one-half mile of the length of this cut has a vertical height in excess of 100 ft. Side slopes were constructed ¼ to 1 in durable rock; 1 to 1 in shale and semi-hard materials; and 1½ to 1 in the overlying earth.

Grading Standards

Prudence and past experience dictated the wisdom of making provision for cutting off the water falling on the slopes of the deeper cuts, as well as material loosened from the slopes by erosion, before it reaches the track ditches. For this reason berms with intercepting ditches were introduced as dictated by conditions. These berms are approximately 26 ft. wide and the intercepting ditches, about 3 ft. deep, were made 8 ft. wide at the bottom to permit the use of standard off-track ditching equipment for keeping them clean. Track ditches were similarly constructed. Prior to the construction of the fills, all unstable materials were removed down to shale or rock, and wasted.

For the new alinements at all the relocations, the maximum curvature was maintained at 2 deg. as compared with 3 deg. 37 min. obtaining on the old alinement at Tunnel 6; 3 deg. 45 min. at Tunnels 7 and 8; and 3 deg. 21 min. at Tunnel 10. In addition to the reduction in maximum curvature, a total of 241 deg. 39 min. of central angle was eliminated. The new alinements also necessitated the relocation of existing highways at six points and the construction of four overhead bridges and one highway subway. Six channel changes involving creeks were required, plus the construction of three short bridges, the extension of another, and the installation of several culverts.

Track Construction

The new double-track roadbed at all locations was made 50 ft. 6 in. wide in both cuts and fills, measured from shoulder to shoulder, and was crowned ¼ in. per ft. The side slopes were made 1⅝ to 1 on the embankments and to the side ditches in cuts. A 12-in. layer of rolled cinders was used as subballast on the new lines constructed around Tunnels 6, 7 and 8, while a 12-in. layer of a mixture of buckshot gravel and sand was used as subballast on the new line at Tunnel 10. Stone ballast, 18 in. under the ties, was applied in four lifts over the subballast.

For the new track structure, 7-in. by 9-in. by 8-ft. 6 in. creosoted ties, pre-dapped for tie plates, were used, spaced 24 per 39-ft. rail. P.S. 140-lb. rail, in 39-ft. lengths, was used. High-carbon rails were laid at 4-ft. 8½-in. gage on curves, and No. 1 rails were laid at 4-ft. 8¼-in. gage on tangents. The rails were joined with standard 6-hole, 36-in. joint bars. Two rail-holding spikes were used per tie plate on tangent track, and three rail-holding spikes per plate were used on curves, two inside and one outside of the rail. In addition, each tie plate has two plate-holding spikes. Rail anchorage normally consists of eight anchors per rail length; where traffic conditions indicate a need for them, four more anchors per rail length were installed to prevent creepage in the opposite direction.

C.& E.I. ISSUES "RATE STREAMLINER"

Work of applying increases to basic freight commodity and class rates simplified

In recent years the task of a freight rate clerk—whether he works for a railroad or a shipper—has been complicated by the necessity of applying a series of increases to the basic rates in effect before July 1, 1946. Because each increase must be applied and a new rate reached before the next increase can be applied, the work is tedious and the opportunities for error are numerous. This has complicated the computation and quotation of rates to the point where rate staffs, even though many of them have been expanded, are heavily burdened. The Chicago & Eastern Illinois is bringing a ray of sunlight into this picture by the issuance of a 24-page "Freight Rate Streamliner," which combines, so far as practical, the general rate increase mechanics so that ratemen can determine the fully increased rate in one operation.

The preparation of this booklet dates back four years to the desire of William F. Custer, a rate and divisions clerk of the C.&E.I., to simplify the rate increases being applied on July 1, 1946, for the benefit of a fellow rate clerk who had just returned from an extended sick leave. The table and chart Mr. Custer created proved so convenient that they were mimeographed and distributed to all C.&E.I. offices. As subsequent rate increases were applied, the compilation was improved and expanded, incorporating many suggestions submitted by railroad men and shippers. The existence of this compilation gradually became known throughout the shipping fraternity with the result that over 10,000 requests, mostly from shippers, were received for the edition issued on February 13, 1950.

The requests for copies were all accompanied by letters indicating the need which this compilation filled. Hence, Mr. Custer, working partly on company time and partly on his own, completely overhauled and expanded his compilation to include all interstate and intrastate increases, with effective dates, and included the special carload rates for coal and coke, fresh fruit, lumber, sugar and fresh vegetables. Rate men will appreciate, of course, that there are various exceptions provided in the individual increase tariffs which are too numerous to digest conveniently and intelligibly. When properly used by an experienced rate man, this booklet makes possible the determination of a fully increased rate without resorting to the actual increase tariffs. As such it promises to be an important time and work saver.

This compilation is not filed with the Interstate Commerce Commission and therefore is not a legal tariff. However, all the rates quoted have been carefully checked, and the procedure has been tested in four years of actual daily use.

This "Freight Rate Streamliner" is now being distributed to all who requested copies of the earlier editions. The C.&E.I. will fill all reasonable requests for copies free of charge. Requests should be addressed to Milo A. Smith, general freight agent of the Chicago & Eastern Illinois, 332 South Michigan ave., Chicago 4.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	B	B	B	D	D	D	D	D	D	F	I	D	D	F	B	B	B	B	B	B
2	B	B	B	D	D	D	D	D	D	F	I	F	F	F	B	B	B	B	B	B
3	B	B	B	D	D	D	D	D	D	F	I	E	F	F	B	B	B	B	B	B
4	D	D	D	D	D	D	D	D	D	F	D	F	F	F	C	C	C	C	C	C
5	D	D	D	D	D	D	D	D	D	E	E	E	E	E	C	C	C	C	C	C
6	D	D	D	D	D	D	D	D	D	E	E	E	E	E	C	C	C	C	C	C
7	D	D	D	D	D	D	D	D	D	E	E	E	E	E	C	C	C	C	C	C
8	D	D	D	D	D	D	D	D	D	E	E	E	E	E	C	C	C	C	C	C
9	D	D	D	D	D	D	D	D	D	E	D	E	E	E	C	C	C	C	C	C
10	F	F	F	F	E	E	E	E	E	E	E	E	E	E	C	C	C	C	C	C
11	I	I	I	D	E	E	E	E	D	E	J	E	E	E	I	I	J	J	I	I
12	D	F	E	F	E	E	E	E	E	E	E	E	E	E	C	C	C	C	C	C
13	D	F	F	F	E	E	E	E	E	E	E	E	E	E	C	C	C	C	C	C
14	F	F	F	F	E	E	E	E	E	E	E	E	E	E	C	C	C	C	C	C
15	B	B	B	C	C	C	C	C	C	C	I	C	C	C	B	B	B	B	B	B
16	B	B	B	C	C	C	C	C	C	C	I	C	C	C	B	B	B	B	B	B

To find a currently applicable rate, it is first necessary to establish the correct basic rate from the applicable class or commodity tariff. The geographical points of origin or destination are then located on the map, and an identifying number ascertained for each. This combination of numbers is then applied to a conversion table (above right), which gives a letter which, in turn, is used on the chart (right) to determine which table should be consulted for the final increased rate. An example of the tables giving the increased rates is shown below

Copyright W. F. Custer.
Reproduced by permission.

BASIC RATES OR CHARGES	LETTER SYMBOL								
	B	C	D	E	F	G	H	I	J
	TABLES OF INCREASED RATES OR CHARGES TO APPLY:								
JUNE 30,1946 Rates.	21	18	14	12	13	17	16	18A	14A
I.C.C.28300 Rates	19	18	18	16	17	17	16	18A	18A
I.C.C.29770 Rates	19	..	..	..	..	..	..	..	..
ACCESSORIAL or TERMINAL Charges . . .	21	20A	20A	20	..	..	20	20B	20B
Carload COMMODITY Rates on ARTICLES NOT LISTED in Items or Note 5 of Tariffs K-162-B,K-166-C or K-168-A .	15	14	14	12	13	13	12	14A	14A
COAL and COKE Carload Rates	22	23	23	24	22	23	24	22	22
FRUITS (Fresh) Carload Rates.	30	32	32	34	33	33	34	31	31
LUMBER Carload Rates.	25	27	27	29	28	28	29	26	26
SUGAR Carload Rates	40	42	42	44	43	43	44	41	41
VEGETABLES (Fresh) Carload Rates. . .	35	37	37	39	38	38	39	36	36

TABLES OF INCREASED RATES AND CHARGES (See Map,Chart and Symbols on Preceding Pages)

BASIC TARIFF RATE OR CHARGE IN CENTS	12	13	14	14A	15	16	17	18	18A	19	20	20A	20B	21
	20% PLUS 20% PLUS 8%	20% PLUS 22½% PLUS 9%	20% PLUS 25% PLUS 9%	20% PLUS 25% PLUS 10%	20% PLUS 30% PLUS 10%	22½% PLUS 20% PLUS 8%	22½% PLUS 22½% PLUS 9%	22½% PLUS 25% PLUS 9%	22½% PLUS 25% PLUS 10%	22½% PLUS 30% PLUS 10%	25% PLUS 20% PLUS 8%	25% PLUS 25% PLUS 9%	25% PLUS 25% PLUS 10%	25% PLUS 30% PLUS 10%
176	273	281	288	290	301	280	289	294	297	309	285	300	303	315
177	274	283	289	292	304	281	290	295	298	310	286	301	304	316
178	278	286	292	295	306	283	291	298	300	311	289	304	307	319
179	279	287	293	296	308	284	292	299	301	314	291	305	308	320
180	280	289	294	297	309	286	295	301	304	316	292	306	309	322
181	281	290	295	298	310	287	296	303	306	318	293	308	311	323
182	283	291	298	300	311	289	298	304	307	319	296	311	314	326
183	285	294	300	303	315	291	299	305	308	320	297	312	315	328
184	286	295	301	304	316	292	301	306	309	322	298	314	317	329
185	287	296	303	306	318	294	303	310	312	325	299	315	318	330
186	289	298	304	307	319	296	304	311	314	326	302	317	320	333
187	291	299	305	308	320	297	306	312	315	328	303	319	322	334
188	293	302	308	311	323	298	307	314	317	329	305	320	323	337
189	294	303	310	312	325	300	310	316	319	332	306	322	325	338
190	296	304	311	314	326	302	311	317	320	333	309	325	328	340
191	297	306	312	315	328	303	313	319	322	334	310	326	329	342
192	298	307	314	317	329	305	314	320	323	337	311	327	330	343
193	300	[illegible]	316	319	332	306	315	322	325	338	[illegible]	328	331	344

Simple Empty Car Classification Cuts Damage and Switching Costs

Shipper gets grade of car he needs with greater frequency—Four classifications replace many times that number at Detroit, and help conserve equipment

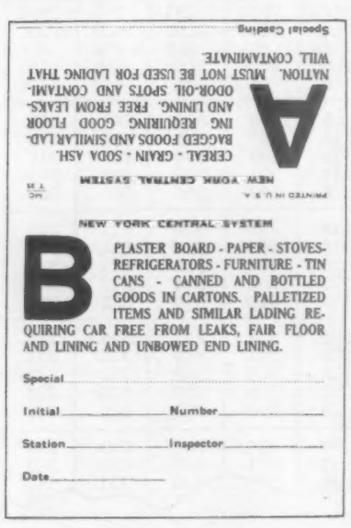
A New York Central car inspector places a commodity card on an empty box car

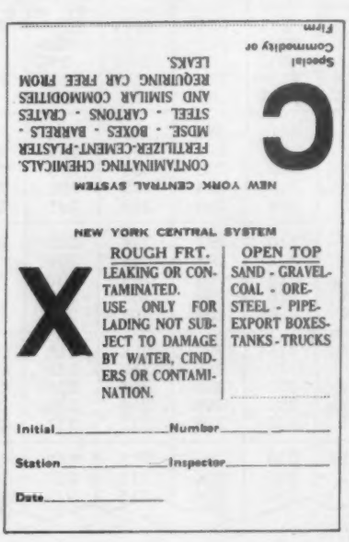
A simplified method of "commodity" carding of empty cars* in experimental use on the Michigan Central District of the New York Central is cutting switching costs, coming closer to giving the shipper the car he needs when he needs it, and simplifying the work of the car department.

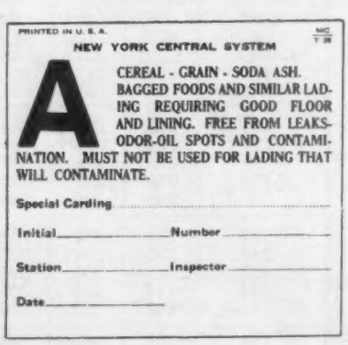
Prior to the adoption of this plan, which effects classification of empties into four groups, at Detroit, for example, many times that number of classifications were maintained, at least on paper. Actually it was practically impossible for yardmasters to make any such exacting separations since time and track space seldom were available; attempts to maintain the old system of empty classification often resulted in costly interterminal hauls of empty equipment. Also, efforts to sort out cars for individual customers were costly and frequently abortive, with the result that the shipper got "a" car, which not infrequently was turned down by him after the railroad had placed it on the siding. More frequently, the shipper loaded the car, and a damage claim resulted. The simplicity of the new scheme is in itself an indication of what it means to the car inspectors, for their job is much easier now.

Empty cars now are classified "A," "B," "C," or "X." Class A cars are the best available, with good roofs, floors and lining, and must be free from odor, oil spots and contamination. Despite the fact that a car may meet all those qualifications, if its trucks and draft gear are under par, it will not meet the specifications of a Class A

*Recent car service orders and the continuing car shortage have "for the duration" somewhat reduced the effectiveness of this system.—EDITOR.


NEW YORK CENTRAL SYSTEM
B
PLASTER BOARD - PAPER - STOVES - REFRIGERATORS - FURNITURE - TIN CANS - CANNED AND BOTTLED GOODS IN CARTONS. PALLETIZED ITEMS AND SIMILAR LADING REQUIRING CAR FREE FROM LEAKS, FAIR FLOOR AND LINING AND UNBOWED END LINING.
Special
Initial Number
Station Inspector
Date


NEW YORK CENTRAL SYSTEM
X
ROUGH FRT.
LEAKING OR CONTAMINATED. USE ONLY FOR LADING NOT SUBJECT TO DAMAGE BY WATER, CINDERS OR CONTAMINATION.
OPEN TOP
SAND - GRAVEL - COAL - ORE - STEEL - PIPE - EXPORT BOXES - TANKS - TRUCKS
Initial Number
Station Inspector
Date


NEW YORK CENTRAL SYSTEM
A
CEREAL - GRAIN - SODA ASH. BAGGED FOODS AND SIMILAR LADING REQUIRING GOOD FLOOR AND LINING. FREE FROM LEAKS-ODOR-OIL SPOTS AND CONTAMINATION. MUST NOT BE USED FOR LADING THAT WILL CONTAMINATE.
Special Carding
Initial Number
Station Inspector
Date

Left—The new commodity card. Above—The card is easily folded so only the desired letter shows. There is a line for special carding when that is necessary.

car. A Class B car is one that is slightly less good, especially as regards floors, but still must be free from contamination. Class C cars are suitable for contaminating chemicals or similar shipments, but require that the car be free from leaks. Class X equipment, the least desirable class, is for rough freight, and must be used only for lading not subject to damage by water, cinders or contamination.

General Instructions

General instructions for the use of this new commodity-type card, issued by the superintendent of equipment and the superintendent of freight transportation of the Michigan Central, read as follows as applying to other than ordinary box cars:

"Box and automobile cars without racks or with racks secured in storage position will be carded A, B, C or X depending on their suitability for the type of lading listed on the card for each classification. The special carding line may be used for designating a special car for a given shipper requiring a car of special construction.

"Automobile rack cars with operative racks will be carded A if car is suitable to load autos.

"Refrigerator cars will be carded with A, B, C or X letters according to condition of car carded. 'A' will be used for a clean and dry refrigerator with good floor racks. 'B' will be used for a clean and wet refrigerator. 'C' will be used for either wet or dry refrigerators that have refuse under floor racks or have poor floor racks or ill-fitting doors. 'X' will be used for all refrigerators with contaminating odors.

"Open top cars will be carded with the letter X and the highest grade of lading car is suitable for must be heavily underlined on the card and special lading written on line provided."

Several of the cards used by the Michigan Central are reproduced. The large letters are visible at considerable distances and are very easy for yard clerks and switch crews to see, reducing their work.

Shippers Satisfied

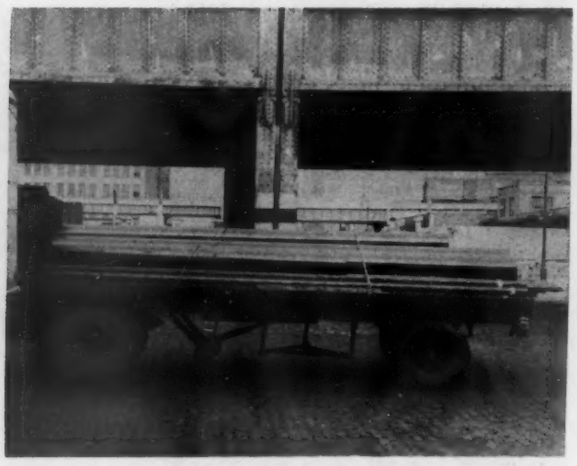
Shippers have expressed great satisfaction with this system, and until the general car shortage hit everyone there was agreement that their car needs (where condition of car was the factor) were being met more frequently than before its introduction. Even with the car shortage, shippers' needs as to the condition of the car are less affected than they would have been under the old method of classifying.

The new procedure was developed by the operating and car departments of the Michigan Central and A. R. Schroeder, assistant supervisor, loss and damage prevention bureau.

At one of the New York Central Detroit yards two switching crews are at work while a road engine prepares to depart

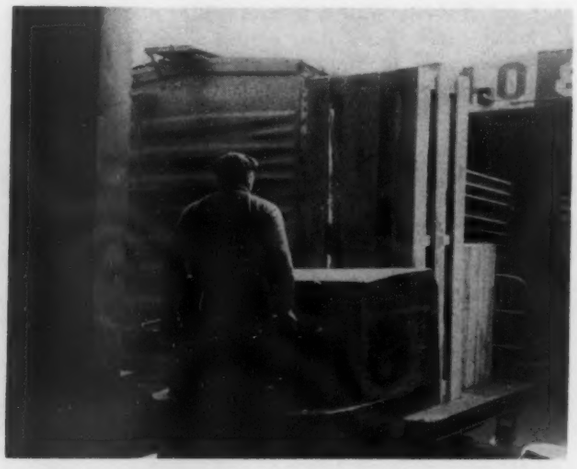
A switching movement on the New York Central in the Detroit area

1—At six p.m. drays are unloading merchandise and forwarder freight at Hudson river Pier 41, New York



2—One example of the kind of *miscellania* the railroads handle in less-carload movement

3—A truck driver unloading package freight. The railroad's responsibility begins on the unloading dock



4—At 6:30 p.m. crews are still running loads onto car-float platforms and down to the car doors

"Absolute Necessity for Performance As Scheduled"

BY W. H. SCHMIDT, JR.
Western Editor, *Railway Age*

A Railway Age editor tries Phase One of second-morning delivery, New York to Chicago, via the Lackawanna

[The inauguration, late in April, of second-morning service for less-carload freight and forwarder traffic between eastern seaboard cities and midwestern centers was one of the most dramatic developments in freight service this year. Railroads participating in this service are the Baltimore & Ohio, the Delaware, Lackawanna & Western, the Lehigh Valley, the Erie, the New York Central, the Nickel Plate, the Pennsylvania and the Wabash. An editor and photographer from *Railway Age's* New York offices rode through in person with a lot of second morning-delivered l.c.l. and forwarder freight New York to Chicago, on the B. & O., an account of which appeared in the "Freight Progress Number", May 20.

Recently this paper's western editor took a ride with a load of freight on the Lackawanna out of New York as far as Buffalo, with a view to finding out how the first leg of a two-line service stacks up. His findings follow.—Editor]

5—(Above left) Bulkheads installed in the cars aid in the prevention of damage from shifting loads

6—(Above) It's a few minutes before 7:30 p.m.; we're on the tug "Washington" and the floatman has made the lines fast

7—(Below left) The other float holds us up for a few minutes during our crossing of the Hudson river

8—(Below) Idler car and engine on Hoboken float bridge ready to pull off "the makings" of D. L. & W. HB-3

There was good reason why I knew my ride on the Lackawanna's HB-3 would be a thriller. I had read the wire which had gone out from the operating headquarters of the D.L.&W. saying that, effective April 10, "classifications and schedules will be drastically changed on Trains HB-1 and HB-3 . . . . to provide comparable or better service than that offered by truck competition and by other railroads." And I savored well the strong language of a sequel phrase: "Importance of these two trains cannot be too strongly emphasized to indicate the *absolute necessity* for performance as scheduled."

As shown in the table, the Lackawanna took the freight—and this reporter—from pierside at New York to East Buffalo yard, 390.4 miles (including water transfer) in 13 hr. 55 min. overall. Excluding time consumed in crossing the Hudson river and assembling the train at Hoboken, but including yard time and delays en route, elapsed time was 12 hrs., 50 min., or an average speed of 30 m.p.h.

Start-to-stop elapsed time for the trip, including water crossing, was 11 hr. 51 min., or an average speed of 33 m.p.h. The greater portion of the route lies through mountainous terrain.

Second-morning delivery, New York to Chicago, is accomplished by the Lackawanna in connection both with the Nickel Plate and the Wabash. These roads, in turn, operate fast through service jointly with several eastern connections. To give an atmosphere of reality to this account, however, the accompanying table, or log, of fast freight, New York to Chicago, follows through a group of merchandise cars which I accompanied on the Lackawanna to Buffalo and saw transferred to the Nickel Plate; their journey over the latter road was later recorded by reference to dispatchers' train sheets. As indicated by the log, some 32 hours were spent overall (including yard and transfer time) in getting the freight from pierside in New York to the Nickel Plate's terminal yard at Chicago. Counting only the 24 hr. 20 min. elapsed time start-to-stop between yards, I would have averaged better than 37

m.p.h., had I accompanied the N.K.P. cars through to Chicago.

How was this accomplished? The answer, in essence, is this: by a nice balance between sacrificing tonnage for speed and cutting speed for tonnage—the delicate adjustment between speed and cost of operation which every successful transportation enterprise must make

How It Is Done

The Lackawanna's wire of instructions, already noted, puts it in concrete terms: "Special attention must be given to:

"(1) Assignment of proper motive power;

(2) Tonnage which will permit making schedule (on the Buffalo division, for example, 50 per cent of the ordinary rating on the ruling grades);

(3) Prompt movement through terminals;

(4) Prompt car inspection;

(5) Prompt delivery to connection at East Buffalo and Black Rock;

(6) Roadway department detours must be planned so that no delays will result to these trains—there must be no waiting; . . .

(7) Each division will be responsible for seeing that power requirements to operate these trains are fully met—and no excuses will be accepted for delay to the trains from waiting for engines or lack of yard power."

Late Closing; Quick Start

In connection with Chicago and St. Louis second-morning delivery, the Lackawanna ordinarily runs two trains out of New York, HB-1 and HB-3. I rode HB-3 because it provides a later closing hour in New York and is somewhat faster. HB-3 ordinarily carries cars for connections at Black Rock, N. Y. (Wabash, Chesapeake & Ohio and Canadian National), as well as the Nickel Plate at Buffalo.

Shoppers can get their freight on HB-3 at Piers 41 and 68, along New York's Hudson river, up to a 6:30 p.m. cut-off. Less than one hour later, at 7:20, I stood in the pilot house of the D.L.&W.'s tug "Washington" (N. J.—not D. C.) and watched the "floatman" cast off from Pier 41. Shortly behind us the "Madison" steamed out with a second float. Together the floats bore 17 cars—all "hot." While we made the 0.7-mile crossing, Master Frank Rubinick described how "this fast freight business" brings tension to the harbor as well as the rails.

An Erie tug and float involuntarily blocked Rubinick's way one evening. Yelled he out of his window: "I gotta fast freight here." Yelled back his crony in the Erie pilot house: "Mine's fast too." So each called his marine dispatcher on short wave radio; the supervisors conferred by phone; and it was decided—this time—to let the D.L.&W. tow proceed first—because it had a schedule tighter by one minute.

Soon we saw two floats coming down river from Pier 68 bearing other cars for HB-3, for which customers uptown were allowed the same cut-off time. By radio came the order "take No. 4 bridge" on the Jersey side—which we did, just 11 minutes after leaving Pier 41. Immediately after the lines were made fast, a diesel-electric switcher and idle car came down the bridge to pull the cars up into the yard. I repaired with Superintendent Fred Diegtel (who this year finished his term as prexy of the American Association of Railroad Superintendents) to the yard office to observe the building up of HB-3 with cars from Piers 41 and 68, from the Hoboken local freighthouse, and from Newark, 10 miles west of Hoboken, from which a transfer

LOG OF FAST FREIGHT—NEW YORK TO CHICAGO D. L. & W.—NICKEL PLATE

Terminal Time (Eastern Time)		Distance (Miles)	Elapsed Time Start-to-stop	Remarks
Lv. Pier 41	7:20 p.m.	0.7	11 min.	By car float
Ar. Hoboken	7:41 p.m.			
Lv. Hoboken	8:25 p.m.	133.1	5 hr. 35 min.	Crossing numerous mountain ranges
Ar. Scranton	2:00 a.m.			
Lv. Scranton	2:30 a.m.	55.9	2 hr.	Heavy grades
Ar. E. Binghamton	4.30 a.m.			
Lv. E. Binghamton	4:55 a.m.	59.7	1 hr. 10 min.	.....
Ar. Elmira	6:05 a.m.			
Lv. Elmira	6:20 a.m.	141.0	2 hr. 55 min.	Pulls in 15 min. early
Ar. E. Buffalo	9:15 a.m.			
TRANSFER TO NICKEL PLATE				
Lv. Buffalo Jct.	1:12 p.m.	115.4	2 hr. 56 min.	Waits at Buffalo for connections
Ar. Conneaut	4:08 p.m.			
Lv. Conneaut	4:29 p.m.	131.2	2 hr. 53 min.	.....
Ar. Bellevue	7:22 p.m.			
(Central Time)				
Lv. Bellevue	8:35 p.m.	31.9	50 min.	.....
Ar. Blair (Fostoria)	9:25 p.m.			
Lv. Blair	9:50 p.m.	93.2	1 hr. 55 min.	.....
Ar. West Wayne	11:45 p.m.			
Lv. West Wayne	12:15 a.m.	139.7	3 hr. 55 min.	Delayed at Chicago crossings
Ar. Chicago	4:10 a.m.			

(A) Total miles ..... 901.8 (excl. Buffalo transfer).
(B) Total time freight in transit ..... 32 hr. 40 min.
(C) Total time moving over the road ..... 24 hr. 20 min.
(D) Average speed (A ÷ C) ..... 37.1 m.p.h.

9—The Lackawanna uses 4,500-hp. diesels on the fast freight jobs. Dynamic braking cuts down delays on hills

10—Ten minutes after arrival in East Buffalo, a transfer cut goes off to a connection for Black Rock and other points

crew departed at 7:55 with stuff trucked in from points all over northern New Jersey.

Soon we were called to the engine, and, at 8:25, five minutes ahead of bulletined time—and but 45 minutes after the floats docked—HB-3 nosed out onto the main and through the Bergen Hill tunnels. Consist: one 4,500-hp., three-unit diesel, equipped with dynamic braking; 43 cars of merchandise or forwarder freight; and 20 other shipments, including 17 loads of bananas in reefers. Total: 63 cars, 2,310 tons.

Port Morris, 46 miles out of Hoboken, we passed doing about 55; I was told that HB-1 stops here and picks up cars of merchandise received from New England by the New York, New Haven & Hartford via Poughkeepsie, N. Y., and the Lehigh & Hudson River. Boston-originated cars thus get second-morning delivery at Chicago. (Farther west, at Binghamton, N. Y., the Lackawanna receives from the Delaware & Hudson other New England-originated freight routed Boston & Maine via Mechanicsville, N. Y., for second-morning delivery in Chicago and St. Louis.)

Conquering the Hills

The trip over the "cut-off" between Port Morris and the Delaware river, on some of the greatest earth fills in the world, by which New Jersey's substantial hills are tamed and flattened, went as smooth as though we were in flat prairieland. The climb up the heavy Pocono grade west of the Delaware valley was a different matter. A drizzling rain made the rails greasy and, for a time, it was touch-and-go. But the engineer succeeded in nursing the train through without a stall and without a helper.

Came a brief pause at Scranton, Pa., 134 miles out, to change crews and set out four merchandise cars. These would be picked up by a later train and arrive in Cleveland, via the Nickel Plate, in time for opening of business on the second day. Here Diegtel headed for a sleeper and Hoboken, while J. A. Craddock, superintendent of the Buffalo division, assumed charge of this now sleepy reporter. We were out of Scranton with 2,310 tons and another 4,500-hp. diesel, this time riding the caboose, where black, hot coffee and sandwiches beguiled that itch to lay me down to sleep. After crossing three mountain ranges, we reached East Binghamton. Nothing for us there, so we highballed through the yard, and pulled through the passenger station at 10 m.p.h. so the "mobile" car forces could give us a running inspection. Then on through the grey morning to Elmira, where we changed crews, but not our caboose, and took on gallons of black coffee. Corning went by in in a flash; Bath likewise. The finest demonstration of dynamic braking came on the steep Danville grade. Before the diesels were put in service, train crews had to use retainers on freights like ours; set them at the top of the hill; and stop again to release them and inspect wheels at the bottom. *We* kept going. Comparatively flat country stretches from here on, and we streaked to East Buffalo yard, arriving at 9:15 a.m., 15 minutes ahead of advertised time. Up to Craddock's office went I for a sketchy wash-up.

Hardly were my hands wet when I saw a Lackawanna transfer engine take off to the right of the office, with the cars from our train for Black Rock and the Canadian routes. On any other day, another crew would have gone by simultaneously with the N.K.P. cars, round the curve to the left, because the Lackawanna considers quick interchange as important as fast road work. Transfer crews at Buffalo compete to make the best time to the Wabash and Nickel Plate yards, and the men who do it fastest, most consistently, get the runs.

But, today, HB-1 was late; we'd passed it in the night; due at 8:45, HB-1 reached East Buffalo behind us. In the old days, nobody got excited about a delay on a freight train running almost 400 miles. "S.O.P.," as they say in the Army.* But it was a far cry from S.O.P. with this outfit and the N.K.P., as you could judge from the phone calls, impatience and general frustration. When HB-1 did pull in, it dissolved with alacrity into transfer cuts. "We'd better drive over to Buffalo Junction," said Craddock, "or the Nickel Plate with leave without our send-off."

Arrived on N.K.P. property I saw BC-1 under yard air and ready, except for HB-1's cars now being rushed over through Buffalo's complicated terminal district. The Lackawanna's red-and-yellow transfer diesel soon came through and BC-1 was on its way in 20 min. It carried loads from the Lehigh Valley, as well as the Lackawanna, but I was able to wave my goodbye directly to cars that were old friends which had rolled through with me from Pier 41. They would reach the terminal yard in Chicago in the small hours of the following morning and their contents would be on railroad and forwarded pick-up and delivery trucks in time for the morning routes.

*Standard Operating Procedure

From Oil to Grain

How the Katy assisted in the creation of grain storage bins from an abandoned oil tank farm

Assistance to shippers by railroads takes a wide variety of forms. The Missouri-Kansas-Texas recently cooperated with the Producer's Commodity Storage Company in converting an abandoned eight-tank "oil farm" into bins capable of handling over two million bushels of grain in these storage-starved days.

At the beginning of this year the grain storage problem was acute, because the huge carry-over storage of 1949 grain was occupying most of the elevator space needed for this year's crop. Therefore the need for finding new storage facilities for the carry-over grain was desperately urgent. The Producer's Commodity Storage Company, whose primary business is the storage of grains, was necessarily preoccupied with this problem.

In recent years the oil industry has been abandoning many of its tank farms in and around the oil fields because it has been found more economical to store crude at the refinery, to pipe it to larger terminals, or to leave it in the ground until needed. Last spring an abandoned tank farm at Henrietta, Tex., which was about to be dismantled for scrap, came to the attention of Producer's. Oil tanks had been successfully converted to grain storage bins before, so it was decided to acquire this farm and convert it to a grain storage facility.

After arranging financing, and obtaining a government commitment to use the facilities, the next step was to contact the Katy. Could the railroad supply lead and spur tracks to the tanks and handle the rush of cars? And could the railroad supply the necessary transportation facilities on time? The Katy studied the rate, handling and operating problems involved. It surveyed the location for switches and tracks. The answer came back quickly: The Katy would!

Cleaning the Tanks

The first spur track to five of the tanks was requested and laid in May, and the work of cleaning the tanks started immediately. That involved scraping away the paraffin and washing down the insides with naphtha to remove every last trace of crude oil. More than 50,000 barrels of residue oil—approximately 50 carloads—were salvaged from the eight tanks. The second spur to the last three tanks was requested and completed in July.

For handling the grain at the storage tank, a pit was dug between each tank and the track. An enclosed, electrically driven, bucket-belt conveyor raises the grain to horizontal belts atop the tank by which it is distributed evenly to the various openings. Railroad cars are emptied into the pits by a scraper pulled by cables from a capstan outside the car.

Early in June the grain began to pour in. It was milo maize in this instance, and came from Kansas City and the grain area to the west and northwest and was destined for eventual movement to the Gulf of Mexico for shipment overseas. It is desirable to have this grain stored at some point convenient to the gulf so that when the government's overseas grain quota calls for new supplies, it can be moved in quickly, and with a minimum of delay.

The grain was delivered to the Katy at Kansas City by connecting roads for movement to the storage facilities at Henrietta. Overseas shipments moved from Houston and Galveston, so the Katy received the haul from Henrietta to the gulf, as well as from Kansas City to the storage bins. The movement to Henrietta was made at a time when the car supply was tight, and when the first 1950 crops were beginning to move. Consequently it called for careful timing and precision operation on the part of all the participating railroads to keep the grain moving without disruption.

Once stored, grain must be carefully tended because it generates heat if kept confined for any length of time. And moisture will collect. It is necessary to "turn" a bin full of grain periodically to lower the temperature and provide aeration for the elimination of moisture. Each tank, therefore, is equipped with horizontal augers across the floor which move the grain out of the bin into the pit whence it is again hoisted to the top of the tank.

Inside the bins the grain must be evenly distributed so as to equalize the strain on the side walls. The "lights" are openings at the top of the bin

Cars are unloaded into track-side pits by means of a large scraper pulled by the portable capstan shown at the lower left

The grain stored at Henrietta came from Kansas City and from the grain areas west and north. The Katy hauls it from Kansas City to Henrietta, and from Henrietta to Houston and Galveston when the grain moved overseas

This "Payloader" tractor (above) is used by the Miller Brewing Company for switching cars at its Milwaukee plant. It can push cars by using the bumpers at either end of the tractor, or pull cars with a chain as shown. This chain is also used to restrain cars moving down hill, with the tractor at the rear. The "switching bumper" at either end of the tractor (below) can be used for pushing cars. This permits greater flexibility in limited space

A Shipper Solves a

The Miller Brewing Company of Milwaukee, Wis., ships approximately 900 cars of cased beer every month directly from its production line. The beer is actually loaded into the cars warm. If empty cars are not immediately available at the loading dock the entire production line stops, since no storage area has been provided. In order to keep these 900 cars "rolling" about 2,500 to 3,000 box-car movements are required each month on a 24-hour a day basis. The cars must be shifted singly and in groups from track to track and from one end of the Miller yard to another.

The opposite ends of the Miller freight yards are a considerable distance apart—yet switching requirements call for the constant movement of the switcher from one end to the other between jobs. The tracks are laid out in a sharp sweeping curve around the Miller plants, which intensifies the movement problem. In the interest of economy and greater mobility, experiments had been undertaken using various types of industrial tractors as off-track switcher units. These tractors did not work out satisfactorily because of insufficient power, inadequate speed, limited field of vision of the operator in rear-mounted seats, and inadequate structural strength in the tractor itself. But these experiments did indicate that an off-track switching unit had many potential advantages.

At the same time the Miller company also had many other materials-handling tasks to perform, such as maintaining roads, removing snow, loading 70-80 tons of coal per day into trucks, and removing rubbish.

A solution was found in a four-wheel-drive tractor shovel identified as the Hough Model HM "Payloader." The first of four of these units obtained by the Miller Brewing Company was purchased specifically for the bulk material handling operations listed above. It was soon discovered that the power, traction and structural strength of the "Payloader" were ideally suited for car switching operations. Accordingly the second "Payloader" was acquired, equipped with a pair of permanently attached 5,000 lb. steel bumpers, fore and aft, instead of the standard front end shovel. It is designed for full time use in switching railway cars. Including the bumpers, the total weight of this switching unit approximates 22,000 lbs. It has proved capable of moving as many as 10 loaded, 40-ton cars in a single switching operation up a six-degree grade and around a sharp curve. The fact that the machine could "climb right over" rails with ease was vitally important. The four-wheel drive also proved adequate to move maximum loads under adverse snow and mud conditions. These original "Payloaders" proved so successful that the Miller company subsequently bought two more—one with a shovel and one with switching bumpers.

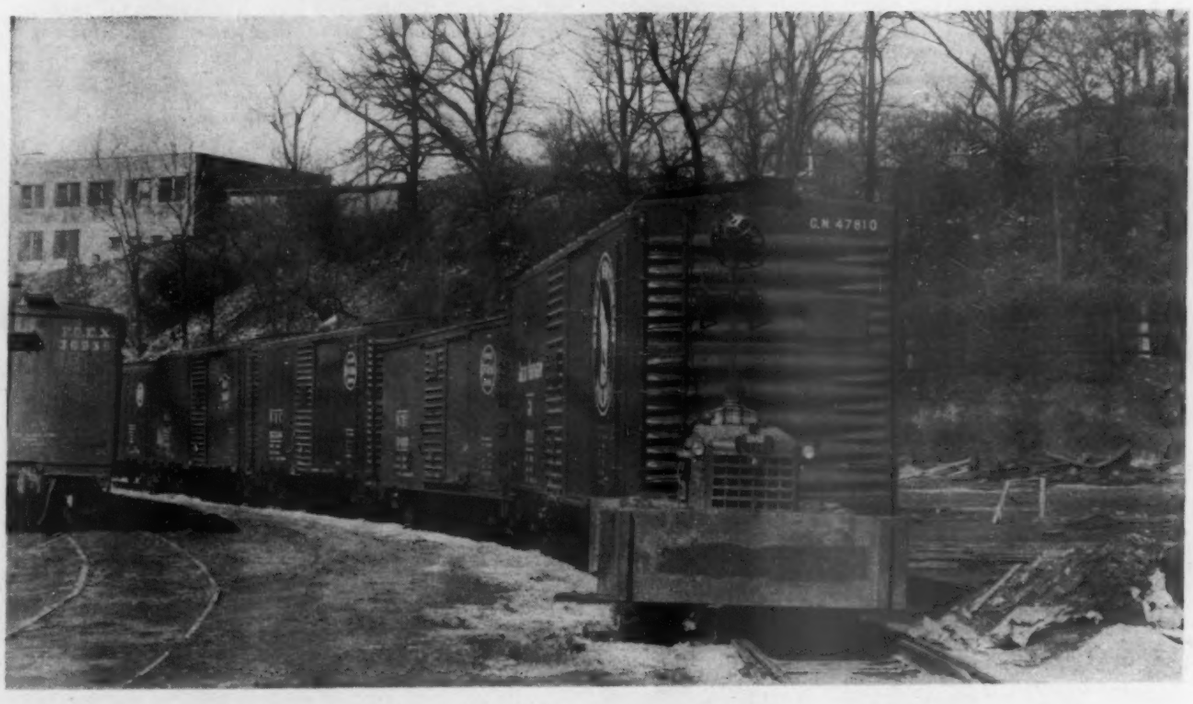
It was found that two "Payloaders," working together, could be used for pulling derailed cars back on the track in a short time and at a fraction of the former cost.

The versatility of the "Payloader" tractor shovels has brought about great savings. For example, the spotting of 3,000 heater units into or on top of cars eliminated many hours of heavy manual labor. During one severe blizzard one unit actually paid for itself by cleaning the entire yard, clearing all roads and removing snow from a ½-mile long hill before the city street cleaners could get through—thus permitting early passage for delivery trucks and freeing the cars in the yard. Otherwise production would have been completely halted.

Troublesome Switching Problem

The "Payloader" tractor shovel, shown at the right hoisting car heaters, can be used for a wide variety of general utility tasks

Below—Ten loaded 40-ton box cars are shoved up a 6-deg. grade around a sharp curve



Many railroads could do a better job of handling l.c.l. "if they wanted to," say industrial traffic men —An l.c.l. department has been suggested on individual railroads and in the A.A.R.—Monahan gives background of Shippers Board proposal

Many Railroad Customers Do Not Favor a National L.C.L. Agency

Despite the fact that the National Association of Shippers Advisory Boards has gone on record as favoring a national agency for handling l.c.l. freight on the railroads, evidently a considerable number of the railroads' customers don't feel that such an agency is the answer to the problem of providing generally better railroad l.c.l. service.

Of shippers who have commented upon the *Railway Age* editorial on the subject (in the issue of October 7, page 47), nearly 47 per cent said that they did favor such an agency, about 30 per cent definitely were opposed to it. About 17 per cent were undecided. The other six per cent discussed the proposition, generally not in terms indicating that the railroads are now giving complete satisfaction, but without expressing their convictions as to its merit. Dissenters from the Shippers Board proposal included some of the big names in the shipping fraternity, and opinion ranged all the way from "never heard of it, who's behind this propaganda?" to "it's another step toward socialism and nationalization of the railroads." Most of those who favored a national l.c.l. agency wanted it built around something similar to the Railway Express Agency, but a considerable number wanted an agency or agencies something like the Dispatch lines of years ago.

Many of those who indicated that they were in favor of a national l.c.l. agency made some reservations. One traffic manager of an iron and steel dealer in the Southwest indicated that as long as he was allowed the right to route his own freight, he would go along with such a proposal. Said he: "If a shipper wanted to move his freight via coastwise steamship line, . . . or in some cooperative service or via any other route that afforded a cheaper method of delivery, he should have the right to so designate, with the assurance that his routing would be protected."

Few of the writers who favored a national l.c.l. agency were sure just how such a plan could be worked out. Most reasoning which favored the national agency proceeded from the premise that l.c.l. traffic is desirable for the railroads, *per se*, which belief stemmed from the "fact" that if the freight forwarders could make money handling l.c.l., then the railroads also ought to be able to do so. The practice of pooling traffic "to eliminate some of the unnecessary competition" that exists in the handling of l.c.l., according to several correspondents, promises large operational economies, and better service because there would be more through cars and fewer transfers. Several traffic men agreed that the proposed national agency still would leave unanswered the problem of service to smaller towns. One western traffic man said that he did not know that he favored a national l.c.l. agency, because "the only definite proposal" made to date was not supported by anything that "looked workable."

Most of those who opposed the national agency said that they were sure that if the individual railroads wanted to they could improve their l.c.l. service. Some of these industrial traffic men pointed out that the eastern carriers have made progress in this respect within the past year or so. There were several suggestions that the railroads establish special departments for l.c.l. merchandise traffic. Shippers noted that some railroads have done this in the past few years, but, to put it in the words of one shipper, "further developments or expansion of these departments should help to improve the handling of l.c.l. merchandise traffic."

A number of correspondents suggested that this special merchandise department be composed of other than traffic department personnel. One man suggested that operating and claim [prevention] personnel be added "to improve the freighthouses and transfers, and to help shippers improve their packing." Another midwestern traffic man said that this department "should have the authority to work out schedules and see to it that they are enforced." Further suggested was an l.c.l. merchandise department in the Association of American Railroads "for coordination of the overall activities of the

l.c.l. or merchandise departments of the various railroads. This A.A.R. department or group could develop into quite a sizeable organization because it, perhaps, should have the responsibility of assembling, keeping and distributing the [proposed] uniform merchandise schedule directory."

Another large shipper of l.c.l. in Eastern territory definitely did not favor a national agency "patterned after the Railway Express Agency. I am, however, in favor of a national agency which will direct the handling of this traffic among the railroads to eliminate some of the unnecessary competition that exists today in this particular field. Several railroads have taken many steps to improve the handling of their l.c.l. freight, but only locally. . . . No action that I can observe is being taken to give the shipper a complete overall service such as there used to be under what we used to know as the Merchants Despatch, Star Union Line, Blue Ridge Dispatch, etc. These Dispatch lines used to represent a through route, and l.c.l. freight in the days of the dispatch lines was largely channelized through this means. It has been my recommendation, for a long time, that these trade names be revitalized to mean a through route and not necessarily the creation of another agency of operations." A number of other traffic men also favored reopening these "Dispatch" routes.

The more frequent suggestions for improving present day l.c.l. service were:

(a) More coordinated rail and highway service.

(b) More adequate pickup and delivery service at larger terminals "or sufficient incentive [increased drayage allowance] should be provided to shippers to increase the use of their own trucks" in this service.

(c) Joint through rates between railroads and motor carriers. "If improved service could be established by coordinating rail and truck movements, probably many shippers would pay a small premium for the faster service."

(d) Uniform and improved tracing methods.

(e) Volume ratings with percentage rate reductions on shipments of 5,000 lb., 10,000 lb., etc. Also, extension of "all freight" rates to more territories.

(f) More trap or ferry cars direct to transfers, rather than "dumping" on local freight stations from pickup and delivery trucks.

(g) Closer cooperation of division offices with small agency stations in furnishing of rate information, the furnishing of cars and weighing of outbound carloads.

Rates Diverted Traffic

Among the most informative comments on this *Railway Age* editorial was a letter from F. W. Monahan, traffic manager of Butler Brothers, St. Louis, Mo., a portion of which reads as follows:

"Being chairman of the less carload committee of the Trans-Missouri-Kansas Shippers Advisory Board I naturally read with a great deal of interest your editorial comment of October 7, regarding the proposal that the railroads make a thorough study of establishing a single joint agency for the handling of all less carload freight. To better understand the shippers' thinking, permit me to describe the backdrop before which this proposal was made. To say the least, it was a dismal and disturbing one. It was a picture of uncoordinated efforts by all too small a group of carriers to improve l.c.l. service, with a good segment of the roads making either only token or no efforts to bring about an improvement.

"Constantly mounting operating costs had resulted in the railroads seeking various general increases in rates and charges. With each succeeding increase in rates there had been an increased diversion of traffic to competing modes of transport. These other modes of transport, with an ever-increasing volume of traffic, usually offered better service at lower rates. Each wave of rate increases had also carried with it restrictions of areas of distribution and added stimulus to the growing trend toward decentralization of industry. The Trans-Missouri-Kansas Advisory Board, as well as other boards, felt the country was confronted with a definite challenge to the existence of railroads as a private enterprise.

"The problems confronting the rail carriers and the shippers, in connection with the handling of less-carload freight, were fast becoming more serious, and it appeared that some way must be found so that shipments could move freely. Railroads contended that such traffic was being handled at a loss. To the extent that such traffic did not bear its share of transportation burden, the deficit must be made up on carload traffic. There were, and are now, pending before the Interstate Commerce Commission several investigations which at the best result in the handling of the overall problem in a piecemeal fashion.

"With this picture before them, and upon a specific request by the rail carriers for suggestions as to how they could improve the less-carload service, the Trans-Missouri-Kansas Shippers Board, by unanimous vote, asked the railroads to give study and consideration to the creation of a national agency for the handling of less-carload traffic.

Competitive Service at Competitive Rates

"We visualized a hard hitting organization bent upon providing competitive service at competitive rates, enabling it to recover much of the so-called 'cream' traffic which had been lost to their competitors. The volume movement, which could be developed, should permit the extensive operation of through overhead cars via most expeditious routes which, with coordinated truck service, would enable the railroads to meet in substantial degree service now performed by other carriers. We considered the competition angle and concluded that the rivalry between the rail carriers is of small consequence as compared to that provided by other modes of transport. Granting that some of the railroads have made advances on their service between market points, it must be pointed out that most of this program has been provoked by outside competition rather than that arising from within their own ranks. With this competition remaining we believe that such an agency could cope with it more effectively than have the individual railroads demonstrated their ability to do so.

"It is true that certain of the railroads have made progress in improving their service, but this improvement is principally between market points and does not apply to local points from which and to which points much tonnage originates and terminates. In the face of these all too few improvements, it is apparent that our railroads' overall l.c.l. service is ailing, and while the plan we propose involves important changes in policy and will no doubt be subjected to many ramifications, there is a definite need for a thorough exploration of the subject.

"A national agency may not be the answer, but since the need for improvement in less-carload handling is serious, and a specific recommendation as requested by the railroads has been offered, we believe it incumbent upon the railroads to make such a study and report to the Advisory Boards the result of this study, together with concrete plans for providing as good or better handling than this plan could or would provide."

Improving Steam Locomotive Performance

Tests on oil burning equipment and the proper drafting of coal-burning power indicate the character of improvements that can be made

Part II

The last major phase of the investigation concerned the testing of various burners. The burners tested were divided into three general classes: (1) gravity-flow steam-atomizing type; (2) high-pressure oil burners; and (3) rotary-cup steam-atomizing burner.

The test was divided into two parts, one covering an outdoor method of evaluating efficiency of burners, and the other covering actual test in the fire box of a locomotive.

A focal-plane shutter of the guillotine type was erected outside the standing test plant building, together with the necessary back stop, burner bracket, oil and steam piping, and a fuel-oil meter. In practice, fuel flow to the burner was set at a fixed rate and atomized by steam without actually burning the oil. Then, the guillotine shutter was tripped and an instantaneous pattern of the droplet size was obtained on a piece of paper at flash wall distance. This is shown in Fig. 7.

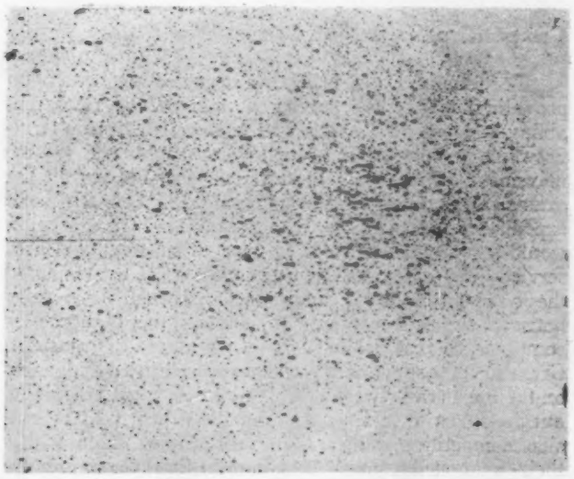


Fig. 7—Fuel oil spray pattern, Von Boden-Ingles oil burner, 15 gal. of oil per minute at 40 lb. steam atomizing pressure

Use of Double-Screened Coal

By selective elimination, one burner of the gravity type was selected. This burner was of the tubular type with steam atomizing holes radial and angular to the central oil passage.

The use of double-screened coal reduces the terminal turning time of steam locomotives. The prepared coal practically eliminates the stopping of flues, slagging of the flue sheet, clinkering of fires, and steam failures that might be attributed to either a poor steaming locomotive or an inferior grade of coal. Either case will call for a delay for testing the locomotive to determine if it is the coal or the locomotive. Such a test increases the detention time at terminals and also runs up the engine-house maintenance cost.

The Louisville & Nashville made a saving of 10.85 per cent in fuel by the use of prepared fuel. The coal bill was reduced $1,000,000 in one year. With the double-screened coal, the evaporation was increased 15 per cent as indicated by the dynamometer test.

On the L. & N., the coal consumption per 1,000 gross ton-miles was 138.2 lb. for the first five months of 1948, with mine-run coal. In 1949, the corresponding five months' average was 123.2 lb., or a reduction of 10.85 per cent. After going through the coal strike and using inferior stored coal that had been on the ground for three years, the year was finished with 122 lb. of coal per 1,000 gross ton-miles.

When it was necessary to use the storage coal for one month, the coal for locomotive use increased to 158 lb. per 1,000 gross ton-miles. The delays on the road and at terminals increased as the coal rate increased.

With good coal and other facilities such as a proper lubricating system, the terminal turning time for steam locomotives can be reduced an unbelievable proportion, with respect to other power in use.

The Baltimore & Ohio has made some standing tests to determine the temperature of a steam-locomotive flue sheet at various points, including the crown of the flue beads, to ascertain the effect of the temperature on so-called "fire cracking" of bridges and flues. Temperatures were determined on the sheet in two ways: (1) by thermocouples welded to the sheet, and the leads carried through a blank off flue at the front end; and (2) by the insertion of fusible plugs on the surface of the flue sheet.

Temperatures were determined by thermocouples at various locations in the fire box and by the use of pyrometric cones at various points in the flues.

For stationary tests on the Baltimore & Ohio, a special arrangement was designed and placed in the pit under the locomotive to be tested. The main driving wheels were removed, pistons blocked, and a shaft substituted which was connected to the valve-gear mechanism. This was driven by a variable speed electric motor located in the pit. With this arrangement, it was possible to obtain fairly accurate and comparable tests, and save the expense of conducting road tests with the dynamometer car. The Baltimore & Ohio has tested the efficiency of stokers, feedwater heaters and valve gears with this arrangement, with satisfactory results.

One of the most recent studies on steam locomotives

This article is the concluding part of an abstract of a report presented before the Locomotive Maintenance Officers' Association. The first part appeared in the November 25 issue, page 23.

involved testing different types of locomotives to determine the extent of modification justified in steam power for freight service on the Chicago division. The earlier locomotives used were heavy 2-8-2 types with 64-in. drivers, having tenders with a capacity for 12,000 gallons of water and 17½ tons of coal. To permit operation of locomotives in through service between New Castle, Pa., and Chicago, 395 miles, various designs of locomotives and tender capacities were tried. Finally, it was determined that the Mountain type converted Class T-3, with a tender capacity of 20,000 gallons of water and 25 tons of coal, gave most efficient operation. The major improvements consisted of cast-steel bed frames, improved feedwater heaters, improved lubrication of the engine truck, drivers and tank-truck journals.

The Canadian Pacific has some 250 oil-burning steam locomotives of which 130 were converted from coal-burning types. This was made possible by discoveries of oil in the Province of Alberta, which made the price of oil more favorable than that of coal. The Canadian Pacific has had some previous experience with oil-burning locomotives, having made its first conversion from a coal-burner in 1912.

As a result of tests conducted by the department of research of the railway, it was decided that little improvement in combustion efficiency could be gained by altering or replacing the burner itself. Instead, it was found that the major improvements would result from alterations to the design of the firebox, in particular the air inlets, arches, etc.

A study was conducted to obtain an overall picture of the oil-burning equipment in use on the Canadian Pacific. This work was carried out during November, 1949, in the Prairie and Pacific regions, and covered three phases, as follows:

1. Air-flow studies in the fireboxes of various locomotives to determine the general flow patterns and relative magnitudes of the air currents. With the fire and sand doors closed and the dampers fully opened, these studies were made with as much blower pressure as possible to give an effective air flow pattern. The air currents were traced by means of a wool tuft.

2. A check was made on the actual brickwork and firepan dimensions of the firebox. This phase was to supplement the above dimensions tabulated previously by the research department from blueprints covering oil-burning locomotives. In addition, a list was compiled giving the exhaust-nozzle dimensions and front-end arrangements for various locomotives in each class.

3. Road observations on the performance of representative locomotives from the various classes of oil-burning steam locomotives.

The fireboxes in present use on the Canadian Pacific locomotives are primarily designed for burning coal. For ideal oil combustion, radical alterations to the present designs would be necessary and an altogether different arrangement and air flow would be required. Considering the style of firebox that the present arrangement must be suited to, it appears that an air flow pattern similar to that obtained in the Class Hlc locomotive gave satisfactory results, particularly at the lower firing rates. If attempts are made to obtain a comparable air flow in a less satisfactory oil-burning locomotive, gains in efficiency should result.

In admitting primary air below the burner and the secondary air through a grid in the floor, it is thought recommendations could be made on the proper location of the openings, the design of the all-important arch, and the actual inlet areas themselves. Before any attempt to do this could be made, further extensive tests will be necessary not only to prove the importance of proper air distribution as related to efficiency, but also to develop some relationship between the air inlet areas and the locomotive dimensions.

It is essential that standardization of the oil-burner arrangement for each class be made, and that it be strictly adhered to. In addition, firemen should be fully and correctly instructed on the proper method of firing oil.

Chicago & North Western Study

Since the cost of fuel is the largest cost factor in the operating expense of a steam locomotive, any reduction of the fuel cost per unit of work will produce marked monetary savings, with reduced maintenance expense as an important secondary result.

The Chicago & North Western determined to check the operation of the front end on its Class H locomotive as a draft pump being called upon to move large volumes of hot gas. It also determined to check the heat developed by the firebox and grate, and the efficiency of the boiler tubes and flues in absorbing the heat that was generated by burning fuel at given firing rates.

The first two Class H-1 locomotives have completed four years of service, and are having flue extensions granted to five years of service. The first two Class H-1 locomotives have made the following mileages to date since rebuilding:

No. 3004—Out of shops June 1, 1946 Accumulated mileage—352,000.

No. 3005—Out of shops June 26, 1946. Accumulated mileage—336,000.

Tire life is running between 150,000 and 180,000 miles

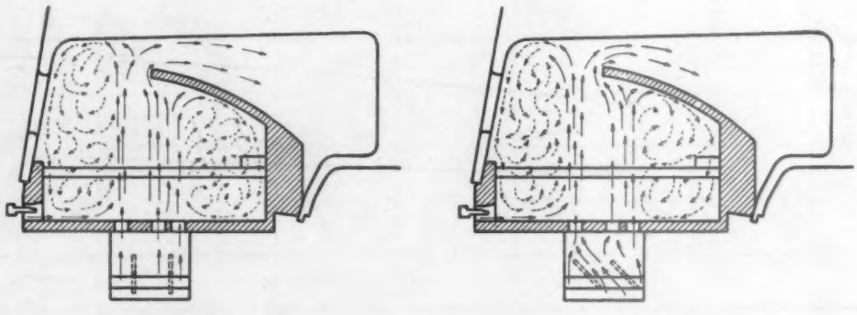


Fig. 8—Air flow pattern, Canadian Pacific Railway Class Hlc locomotive No. 2482 with back burner arrangement

per locomotive, starting with a tire 4 inches thick and running down to 2½ inches thick.

The criteria selected for the analysis were:

1. Draft under the ashpan.
2. Draft in the firebox.
3. Draft in back of the diaphragm sheet.
4. Draft in front of the diaphragm sheet.
5. Temperature in the firebox.
6. Temperature of flue gases at the stack.
7. Temperature of the superheated steam.
8. Fuel consumption of the locomotive.
9. Water consumption.

From the above criteria, the Chicago & North Western evaluated the following elements in the design of the locomotive:

A. Ability of the front end to move proportionately larger volumes of flue gas for increased rates of working or fuel consumption.

B. Probable boiler heat absorption efficiency under average conditions.

C. Pounds of fuel per 1,000 gross ton-miles.

D. Average firing rates to support trains of certain gross tons burden over a fixed mileage.

Tests were conducted on the original Class H locomotive on Items 1 to 7, inclusive, and the results plotted. Examination of these data developed a single common fact. It was noted that regardless of throttle position, all draft and temperature curves were maximum in the vicinity of 18-20 p.s.i. back pressure. Any back pressures used in excess of 20 p.s.i. actually resulted in lower draft values throughout the boiler and a reduction in firebox and superheat temperatures. Remembering that in order to produce back pressures in excess of 20 p.s.i. the locomotive is working hard and burning large volumes of fuel. These older Class H locomotives produced a steadily decreasing increment of useful power the harder they are worked beyond 20 p.s.i. back pressure.

The test data also showed that beyond 14 p.s.i. back pressure, the rate of increase in steaming for corresponding increasing firing rates starts to decline until at 20 p.s.i. back pressure the rate of decline produces a specifically negative result in overall performance.

The reasons for the high back pressures indicated in these tests arise from the type of fuel used on the Chicago & North Western, which is a Southern Illinois mine-run coal, not washed, treated or sized. The fuel contains 4 per cent to 6 per cent sulphur and 10 per cent to 13 per cent ash, and contains 10,500 B.t.u. per lb. on the wet basis.

The Chicago & North Western obtained the following answers to all four of the principal questions to be answered by the criterion data:

A. The limitations of the older type of front-end and firebox setup to handle steam production at advanced rates of working was clearly evident. Mounting firing rates and higher back pressures failed to produce more draft or proportionately larger volumes of hot gas through the boiler, and actually resulted in reduced steam production.

B. Average boiler heat-absorption efficiency was 56 per cent at an average firing rate of 89 lb. of fuel per sq. ft. of grate per hour.

C. An average of 95 lb. of fuel produced 1,000 g.t.m.

1,000 gross ton-miles*	Average Firing Rate, lb. fuel per sq. ft. of grae per hr.
138	80
165	75
375	91
397	78

*Gross ton-miles based in all cases on run between Proviso, Ill., and Clinton, Iowa.

Since more fuel could not be burned, as the train tonnage increased, horsepower delivered by the locomotive was almost constant, and time over the division was seriously increased.

Visual observations made while the tests were being made on Locomotive No. 3001 developed the following additional data:

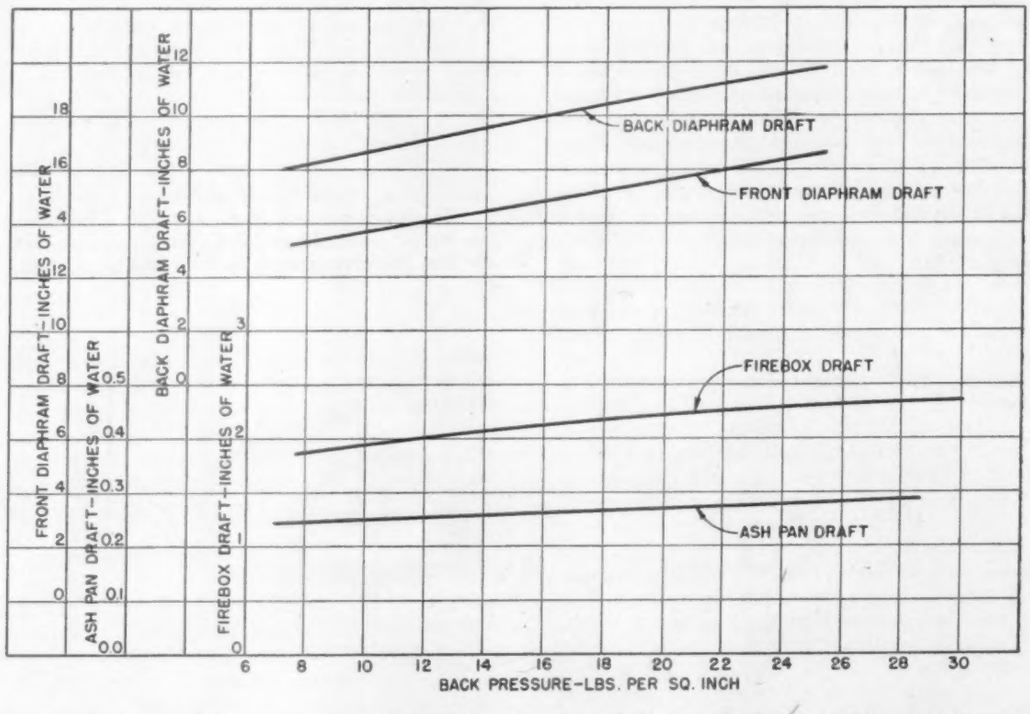


Fig. 9—Draft versus back pressure, modernized Chicago & North Western locomotive No. 3005, one-half throttle

a. Due to the high back pressures produced in order to force steam from the engine, only a small number of flues in the upper portion of the flue sheet were producing steam. The flues and tubes in the outer periphery and in the lower section of the flue sheet were idle and were plugging with cinders. At the same time, the small number of flues in the upper central portion of the flue sheet were developing considerable cinder cutting.

b. Due to too large a percentage of air opening through the grate, most of the air moving through the boiler was coming through the fire bed immediately in front of the firedoor, and being pulled directly over the arch. The fuel bed directly under the arch was passing only a relatively small volume of air. Consequently, the fires were burning fairly clean and even under the arch, while at the rear of the firebox clinkering, smoking and piling were noted. The Chicago & North Western determined that such a short circuiting in draft was taking place at the rear of the grate, and that the fuel bed was actually being chilled by too much air. The violent draft directly in front of the stoker pot was also pulling all fines and a considerable portion of the smaller particles of coal directly up and over the arch without touching the fuel bed. Naturally, plugged netting and considerable drifting of cinders in the front end was experienced.

In remedying these conditions, the Chicago & North Western made the following changes:

a. Provide 4-in. flues and 2¼-in. tubes in place of older 3½-in. flues and 2-in. tubes. Such a substitution would result in slightly more net gas area through the boiler and a reduction in the ratio of flue and tube perimeter to the gas area. The reduction in the ratio of flue and tube perimeter to gas area simply means less friction or resistance to the flow of the flue gases through the barrel of the boiler for any given gas area.

b. Reduce the overall air opening through the grates, and in particular, reduce the percentage of air opening through the grate at the rear under the open section of the arch. The Hulson tuyere type grate offered a means of passing large volumes of air without occasioning damaging turbulence through the fuel bed. An air opening of 22 per cent in all tuyere elements lying under the arch and 18 per cent in the tuyeres at the rear of the firebox were selected. A more uniform rate of air passage through the front and rear of the grates was provided by this "zoning" procedure.

c. The table plate in the front end was raised 11-in. higher than its old position. The feedwater-heater steam pipe was moved to a location immediately behind the left steam pipe in order to minimize resistance to flue-gas movement. A rectangular type netting box was designed with increased gas area. The choke dimension of the stack was increased to 20-in. diameter. An annular-ported exhaust nozzle was placed 7¾-in. below the bottom of the stack bell in order to seal the stack at low back pressures when divergence of the stack blast would be a maximum. The stack was made 5-ft.-2-in. long, with its taper having only slightly less divergence than the six degrees commonly used for exhaust gas expansion. Boiler proportions were provided as shown in the table.

BOILER PROPORTIONS OF THE CHICAGO & NORTH WESTERN CLASS H-1 LOCOMOTIVE

	Sq. in.	Per cent
Net gas area through tubes and flues	1,338	100
Maximum area under table plate	2,040	153
Minimum area under table plate	1,056	79
Area under draft sheet	992	74
Gas area through netting box	2,180	163
Area of stack choke	314	23
Area between stack bell and nozzle	840	63

The Chicago & North Western conducted another series of road tests on the first Class H-1 locomotive built to the above specifications. On these tests they took the same data taken for the older Class H locomotives.

Figs. 9 and 10, marked "Engine 3005" indicate the im-

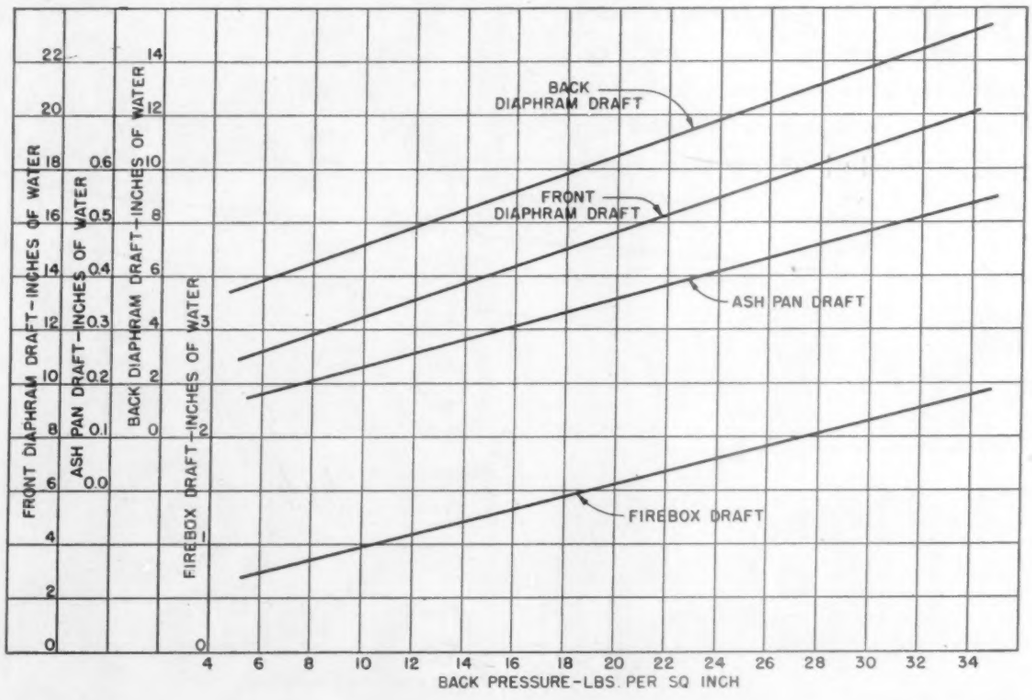


Fig. 10—Draft versus back pressure, modernized Chicago & North Western locomotive No. 3005, full throttle

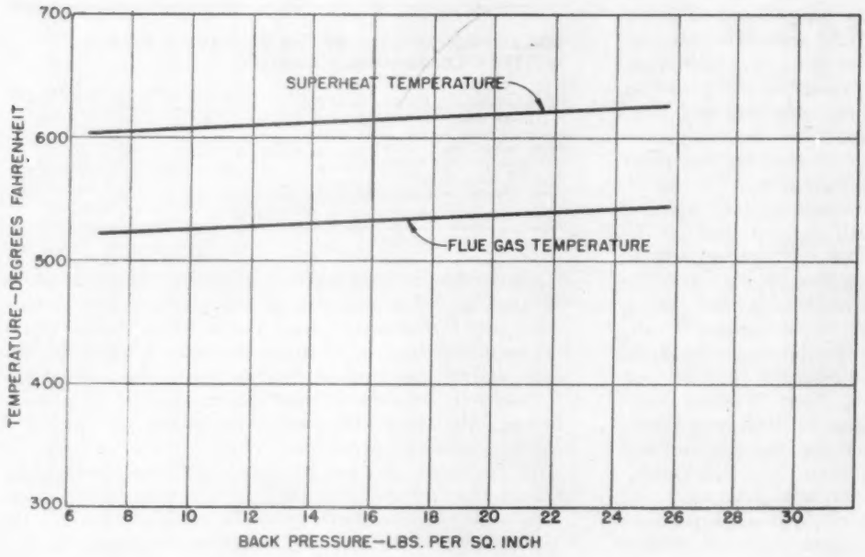


Fig. 11—Back pressure versus superheat and flue gas temperature, modernized Chicago & North Western locomotive No. 3005, one-half throttle

provement in the draft conditions existing in the new locomotive.

In the case of Locomotive 3005, there were no maximum points on the draft curves. The draft produced by the nozzle and draft apparatus in the locomotive gave uniformly increasing vacuums regardless of how high the back pressure was carried.

The front diaphragm draft in the case of Locomotive 3005 was constantly higher for every back pressure than was the front diaphragm draft on Locomotive 3001. This draft reading was taken in the same general area of the front end as the nozzles and represents the true gas pumping effect of the exhaust nozzle.

The firebox draft for both types of locomotives is nearly the same below 18 p.s.i. back pressure. Above 18 p.s.i. back pressure, the 3005 shows a steady increase in vacuum with proportionately larger volumes of gas moving.

The closing down of the air opening through the grate on the Class H-1 locomotive shows up clearly when comparing firebox and ashpan drafts between the two types of locomotives. The Class H-1 locomotives show generally between 1.7 and 2.0 in. of draft loss through grate and fuel bed, while the older Class H locomotives indicate a draft loss of .9 to 1.8 in. across the fuel bed at corresponding back pressures. Most of this increased draft loss through the fuel bed has been occasioned by the increased firebox draft and by not increasing the ashpan draft. The increased firebox draft acting through the greater resistance of the fuel bed and grate on the Class H-1 locomotives has had the effect of throttling the air flow sufficiently so that volumewise it has evened out over the ashpan side of the grate area. With the C.&N.W.'s low coking-temperature coal, this reduced air velocity has been beneficial in allowing this coal more time to come up to ignition temperature.

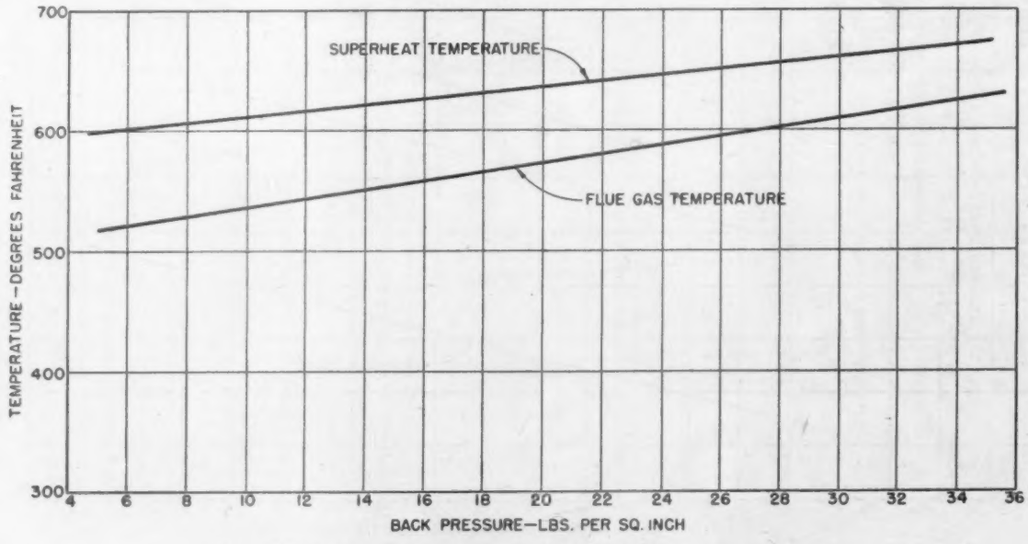


Fig. 12—Back pressure versus superheat and flue gas temperature, modernized Chicago & North Western locomotive No. 3005, full throttle

Figs. 11 and 12, marked "Engine 3005," show no maximum temperature readings for advancing back pressures and rates of working. Constant proportionality between firebox temperature, flue-gas temperature, and superheat temperature as against back pressure is clearly evident.

The performance improvement of the Class H-1 locomotive over the old Class H locomotive may be summarized as follows:

A. Mounting firing rates and back pressures produced constantly increasing drafts with proportionately larger volumes of gas being moved through the boiler.

B. Average boiler heat absorption efficiency is 63 per cent at an average firing rate of 80 lb. of fuel per sq. ft. of grate per hour.

C. An average of 74.5 lb. of fuel produced 1,000 gross ton-miles.

1,000 gross ton-miles*	Average firing rate
242	68
317	81
484	85
489	92

*Gross ton-miles based in all cases on run between Proviso, Ill., and Clinton, Iowa.

From the table, it is evident that more coal energy is being released in the locomotive for heavier and heavier trains, a situation not evident on the older Class H locomotives.

Visual observations made on the Class H-1 locomotives showed:

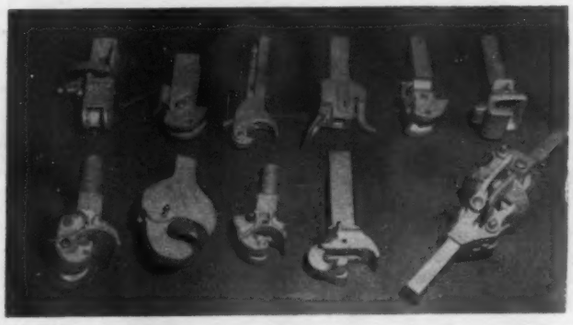
a. Little or no cinder cutting of tubes and flues. What little cinder cutting did occur was confined to the flue area immediately adjacent to the superheater unit return bends and was due to deflection of the cinders in the gas stream impinging on the unit return bend and glancing off to strike the flue wall. This situation was quickly handled by installing light gage metal thimbles around the extreme ends of the superheater unit return bends.

b. Since gas velocities in the firebox were more even over the grate area, the hot gases arising from the fuel bed directly under the arch swept back toward the firedoor and produced considerably secondary burning of fines and volatile gases. The net result was a higher firebox temperature and marked reduction of carry-over in the front end.

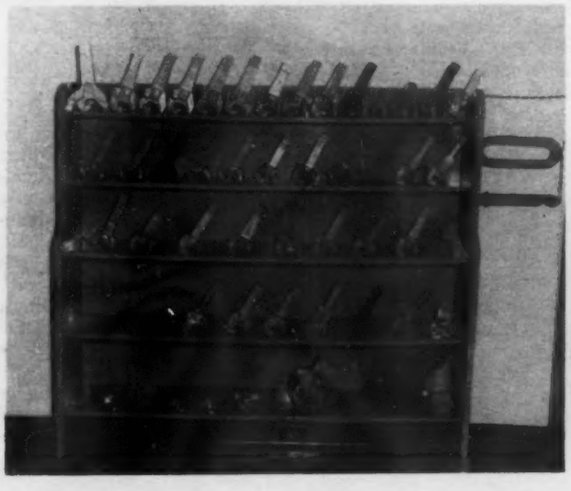
Due to the increased combustion and steam temperatures existing in the new Class H-1 locomotives over the old Class H locomotives, the C.&N.W. has benefited by the following savings:

	Class H	Class H-1	Per cent saving
Gallons of water per 1,000 g.t.m.	67.6	61.9	8½
Pounds of fuel per 1,000 g.t.m.	95.1	74.5	21½

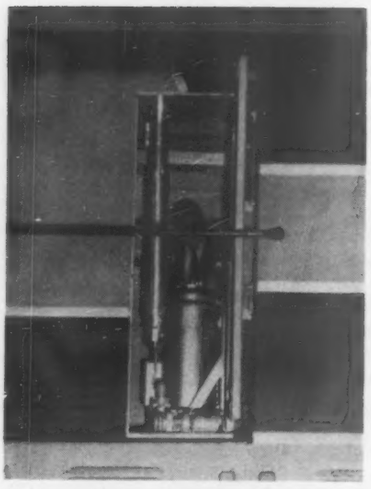
Individual Class H-1 locomotives have delivered 1,000 gross ton-miles on as little as 56 lb. of fuel.



A PERMANENT EXHIBIT of scale models of car couplers at the offices of the National Malleable & Steel Castings Co., Cleveland, Ohio. The history of coupler development is traced from pre-Janney days down through the various steps in vertical-plane coupler-development to present-day standards. Examples of the Miller-hook and the link-and-pin types are also included



New and Improved Products of the Manufacturers



The Vapor radiator-water heater installed vertically in a switcher. To suit various locomotive types, it may be installed vertically or horizontally, or on rail motor cars, under the car

The Vapor heater has a capacity of 150,000 B.t.u. per hour and fits in a space 33 in. by 19 in. by 26 in.

DIESEL FREEZE-UP DURING LAYOVER PREVENTED

The Vapor Heating Corporation, Chicago, has developed a compact diesel-fuel-burning hot water heater for preventing overnight standby freeze-up of diesel switching locomotive engines and for use as a booster heater on self-propelled diesel rail cars. The unit is over 80 per cent efficient, putting out 150,000 B.t.u. per hour on 1½ gal. of fuel. Current consumption is six amperes at 64 volts for the 1/3-hp. water-circulating motor. The entire unit weighs 225 lb. and fits in a space 33 in. long, 19 in. wide and 26 in. high. The fire pot is made of Iconel to withstand the 2,500-deg. temperature.

When the diesel switcher is parked for the night the operator flips the heater switch, which turns on the motor that circulates the coolant water and drives the forced draft blower, fuel pump and magneto. The coolant water is continuously circulated during standby hours. When the coolant drops to 100 deg. F., the aquastat in the return leg of the circulating pump calls for heat, and fuel is released. When the coolant water is heated up to 140 deg. the fuel is cut off but circulation continues.

As a booster heater on a self-propelled diesel passenger car, the aquastat control causes the heater to fire up as needed to keep the water in the storage tank, engine blocks and car radiation system at the desired setting usually on at 160 deg. and off at 180.

Several controls have been developed to insure proper operation and to protect the installation. The water temperature control keeps the water from being heated above 205 deg. If the fire does not light, the unit is shut off in about 45 seconds. An overload cutout protects the motor in the event of bearing failures or obstructions in the water pump. The switcher may be equipped with an alarm bell to function in case the unit cuts out.

UNITOW TRACTOR

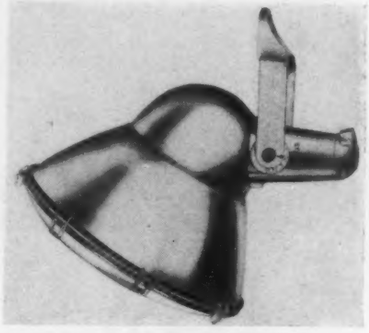
A towing tractor with a drawbar pulley of 1,800 lb. was recently put on the market by Hensel Green & Co., 9 So. Clinton st., Chicago 6. This towing unit is powered by an International Harvester U-1 engine. There are three speeds forward, ranging from 3.3 to 10 m.p.h. Reverse speed is 3.7 m.p.h.

This tractor is equipped with pneumatic tires on all four wheels. The large rear wheels are mounted with large tractor-type tires.

Turning radius of the Model 18 Unitow is 72 in. It is 40 in. wide and 79½ in. long.

LOADMASTER STORAGE RACK

Portable storage racks said to be easily and speedily movable from one place to another were announced recently by Lewis-Shepard Products, Inc., 260 Walnut st., Watertown 72, Mass. These racks consist of welded sections which are assembled by means of sliding joints. No bolts are used, hence no tools are required in assembly. The sections are self-nesting. They can be made for various sizes of pallets and to suit various weights and heights of loads.



NARROW OR MEDIUM BEAM FLOODLIGHT

Available as either an open or inclosed type with a narrow or medium beam, this new 18½-in. Alzak aluminum reflector floodlight has recently been announced by the Steber Manufacturing Company, Broadview, Ill. Known as "Series 4000," the new unit can be obtained with cross-arm, wall, clamp or pole type mounting fittings. The yoke-type bracket to which the mounting fittings are attached permits the entire unit to be swung over to cross-arm or platform for cleaning or relamping. Open types can be converted to enclosed types after installation if the need arises.

GENERAL NEWS

Severe Storm Hits Trunk Line Railroads

Rain, wind and snow cause heavy damage, disrupt service

One of the worst rain, wind and snow storms ever to strike the northeastern portion of the country began around 12:30 a.m. on November 25. Raging for almost a full day, the storm caused several deaths, millions of dollars worth of property damage and, in many instances, severely disrupted railroad service. Approximately two in. of rain fell during the storm and winds as high as 94 m.p.h. were recorded, with snowfalls up to 27 in. in the Pittsburgh, Pa., and Cleveland, Ohio, areas.

The Pennsylvania reported minor-to-serious damage to catenary and transmission lines in its electrified territory. Many train delays were caused by damaged pantographs, signals being put out of order and trees and structures being blown across the right-of-way. At 6 a.m. on November 25 the Raritan River drawbridge of the New York & Long Branch was knocked out of service when it was struck by a derrick being moved downstream by a tug. All P.R.R. trains using this line were annulled. Traffic was maintained by buses. The westbound track on this section was restored late on November 27 and the eastbound track on the following day.

Passaic River Overflows

Traffic on the road's Jersey City branch was suspended at 8:40 a.m. on November 25, when the Passaic river overflowed its banks, flooding running and third rail tracks near Kearny, N. J. Passengers using this line were routed to and from Pennsylvania Station in Newark, N. J., until service was resumed at 3:30 a.m. on November 26. The Belvidere branch—Trenton, N.J., to Phillipsburg—was out of service for several hours beginning at 3:30 a.m. on November 25. At 1:29 p.m. on that day catenary wires were blown down on several mainline tracks east of Linden, N.J., and because of particularly high winds crews could not make the necessary repairs until 11:45 p.m. All power on the two mainline running tracks between Elmora, N.J., and New York was cut at 2 p.m. on November 25 and normal operations there were not resumed for seven hours. Power was lost on the No. 1 and 2 tracks between Harrison, N.J., and Portal at 2 p.m. on November 25 and not permanently restored until 6 p.m.

On November 25 and 26 all P.R.R. trains coming into New York from the west were late as much as six and seven hours, primarily because of snow conditions west of Pittsburgh. Several trains scheduled to leave New York were annulled and many were delayed in getting away. All mainline trains were back to normal on November 27. Direct service between New York and Atlantic City, N. J., was suspended by the P.R.R. because of flood conditions. Passengers to Atlantic City took trains to North Philadelphia, Pa., there transferring to trains leaving from Broad Street station for Absecon. Bus service from that point to Atlantic City was provided by the railroad. The direct New York to Atlantic City service had not been restored as this issue of *Railway Age* went to press.

On the New Haven

Intermittent power failures occurred from 8:08 a.m. on November 25 on the New York, New Haven & Hartford's Shore line between New York and New Haven, Conn. Diesel-electric locomotives from New Haven were put into emergency use in this territory, but most trains ran 30 min. to 2 hr. late. The road reported a power failure at the Hell Gate bridge in New York, which, however, lasted only a short while. On the Berkshire division power was lost between Norwalk, Conn., and Danbury. A washout on the Pittsfield branch necessitated use of buses beginning in the middle of the morning on November 25. High water at several points between Saybrook, Conn., and Providence, R.I., caused adoption of "slow orders" nearly the entire day of November 26. By morning of November 26 the electric division was operating nearly at normal. On that day diesels were used on the Berkshire division until electric operation was fully restored. The road operated 30 specials on November 26 between New Haven and New York to bring holiday travelers home.

C.N.J., N.Y.C.

The Central of New Jersey told *Railway Age* its main line was not badly affected by the storm, most damage being done on branches. Its ferry service across the Hudson river at New York was forced out at the height of the storm, when its Jersey City terminal was flooded, but operations were resumed late on November 26. Tracks, impassable for a while, were severely battered by wind and high water between Elizabethport, N.J., and Newark. One track was returned to service on the morning of November 27, and the second track on November 29. Both tracks into Newark were washed out on November 25 and mainline commuters to that city changed to Pennsylvania trains at Elizabeth. One track on the Newark branch was opened under very slow speed order on November 28 and the second track shortly before 6 a.m. the following day. The road informed its commuters, through varityped notices placed on seats of its shorebound trains, of the type, amount and location of damage along its lines, and pointed out to them that all available facilities were being used to restore normal service as soon as possible.

C.N.J. trains to Point Pleasant, N. J., were also affected by the damage, reported above, to the Raritan River bridge of the N. Y. & L. B., while Baltimore & Ohio and Reading trains to and from New York were annulled for a time, because of the flooding of the Jersey Central's Jersey City terminal.

On the West Shore, the New York Central tracks were washed out between Cornwall, N. Y., and Newburgh because of floods caused by a broken dam. A third rail was shortcircuited on the Hudson electric division at Spuyten Duyvil, N. Y. All signals were knocked out between Yonkers, N. Y., and Mott Haven because of short circuiting. At this point the road was operating on hand signals for many hours.

Snow Drifts to 8 Ft.

Switches were frozen in the Cincinnati, Ohio, terminal area where extremely low temperatures prevailed. Snowdrifts 6 to 8 ft. deep occurred between Dunkirk, N. Y., and Toledo, Ohio. As this issue went to press, service along this route had not been completely restored to normal.

Along the Hudson river extremely violent gusts of wind forced trees, telegraph poles and even boats onto the tracks. The Weehawken, N. J., passenger terminal was four feet deep in water, which did not recede for several hours. Passengers to this point were informed of the situation and many were able to use alternative forms of transportation to reach their destinations. Ferry service between Weehawken and New York was out for several hours and football specials in the Cleveland area were cancelled.

Heavy snowfall in the Pittsburgh area forced the Pittsburgh & Lake Erie to annul all except four west bound passenger trains on November 26. Eastbound train service on that day was described as "uncertain," and all service was subject to severe delay while storm conditions prevailed.

Damage to Lehigh Valley properties totaled $250,000, most being centered around New York harbor. The road lost

FOLLOWING A NOVEMBER 10 MORNING TOUR of San Francisco and Oakland railroad facilities, and luncheon in two railroad diners, 47 San Francisco school teachers attended a panel discussion of railroad progress by executives of the three rail lines serving the city.

The three roads — the Southern Pacific, the Western Pacific and the Atchison, Topeka & Santa Fe, teamed up as hosts for the tour as part of a Business-Education Day sponsored by the San Francisco Chamber of Commerce. Shown seated, left to right, are members of the afternoon panel: K. C. Ingram, assistant to president, S. P.; Gilbert H. Kneiss, assistant to president, W. P.; E. O. Bagenstos, superintendent, Terminal division, Santa Fe; L. C. Gosney, comptroller and general auditor, W. P.; L. R. Everett, western general passenger agent, Santa Fe; J. G. Wheeler, passenger traffic manager, W. P.; Claude E. Peterson, vice-president, system passenger traffic, S. P.; Elmer B. Johnson, freight traffic manager, Santa Fe; J. W. Corbett, vice-president, operations, S. P.; H. C. Munson, vice-president and general manager, W. P.; U. E. Nordeen, assistant general auditor, S. P.; W. W. Hale, vice-president, system freight traffic, S. P.; and H. E. Poulterer, vice-president, traffic, W. P.

one barge loaded with scrap, although it is thought this may be salvagable. During the storm its passenger trains were 1 to 1½ hr. late, but service had been restored to normal by November 29.

The Hoboken, N. J., passenger station of the Delaware, Lackawanna & Western was flooded with water 3½ to 4 ft. deep. Many passengers were marooned there for several hours. Service was suspended east of Newark between 9:15 and 11 a.m. on November 25. Operations on the Morristown electric line were resumed after 11 a.m. that day, despite a number of trees blown onto the tracks. A passenger waiting station on this line also was blown onto one of the tracks. Track gangs, including extra men, were out constantly clearing tracks. Track obstructions kept the steam-powered Boonton line out almost all of November 25, but regular suburban service was fully restored by night of November 25. The "Phoebe Snow" left at 10:40 a.m. on November 25, only 10 min. late. No track was washed out anywhere on the Lackawanna, most trouble being caused by signal failures and obstructions on tracks. All service returned to normal on November 26, except between Summit, N. J., and Gladstone, where operations were hampered because of trees on tracks and signals out of commission. This territory was fully cleared on November 27.

The Erie station at Jersey City, N. J., was flooded on November 25 and suburban service was disrupted. Mainline service interruptions were largely restored by the following day, but were of longer duration on some branches. Mainline trains to and from the west were late, in some cases by many hours.

Both Lackawanna and Erie ferry service across the Hudson was inoperative on November 25.

78 Killed, 203 Injured, in Collision on Long Island

Seventy-eight persons were killed and 203 injured in a rear-end collision between two Long Island commuter trains at Metropolitan avenue, Kew Gardens, N. Y., at 6:28 p.m. on November 22. While no official statements as to the cause of the wreck have yet been released, unofficial statements have indicated that it was probably due to the failure of Benjamin J. Pokorny, motorman of the second train, who was killed in the collision, to observe required speed restrictions after having halted his train at the automatic block signal protecting the train which was struck.

An investigation of the accident (Ex Parte No. 176) was begun by the Interstate Commerce Commission in New York on November 25, with Commissioner W. J. Patterson, head of the commission's Bureau of Safety, presiding, assisted by Examiner E. J. Hoy. The New York State Public Service Commission began an investigation of its own on November 29, while other studies are being made by New York City and by Queens, Nassau and Suffolk counties, in which most of the railroad's commuter patrons reside.

The accident led to demands from officials of New York state and city, and of Nassau and Suffolk counties, for removal of the Long Island's two trustees in bankruptcy, David E. Smucker and Hunter L. Delatour; and to appointment by New York State Governor Thomas E. Dewey of a special three-man commission to investigate the affairs of the railroad and report in 60 days as to what changes, if any, they consider desirable in its management, its operating practices or its financial structure.

The collision has likewise produced suggestions from the press and from Long Island commuter groups that the railroad be taken over by the state or the city, or by a special public or quasi-public authority similar to the Port of New York Authority; and to a reported move by a group of New York banking interests to buy the road to keep it out of public ownership. Another result of the accident was indefinite postponement of action on the road's petition for a 32.5 per cent increase in commutation fares, on which a November 28 hearing had been scheduled by the New York Public Service Commission.

Details of Accident

The Thanksgiving eve collision involved two eastbound commuter trains — No. 780, which had left New York's Pennsylvania Station at 6:10½ p.m., one-half minute behind schedule, eastbound for Hempstead, N. Y., with its first scheduled stop at Jamaica; and No. 174, which had left Pennsylvania Station on schedule at 6:14 p.m., eastbound for Babylon, with its first scheduled stop at Rockville Centre. Each train consisted of 12 steel, multiple-unit cars; the estimated combined load of both trains was 2,000 passengers.

The accident occurred on the eastbound express track (No. 2) of the Long Island's four-track main line between New York and Jamaica, at a point approximately 1,700 ft. east of the east end of the Kew Gardens passenger station.

Some 1,000 ft. west of Kew Gardens station is a continuously lighted five-aspect, automatic block, position light signal, designated as Signal C; 4,335 ft. east of that signal is another position light signal, designated as 114R, which is the home signal for the Jamaica interlocking and is controlled from "J" tower at Jamaica. The actual point of collision was 3,516 ft. east of Signal C and 819 ft. west of Signal 114R. The track is tangent from a point some 1,100 ft. west of Signal C to and beyond the point of the accident. For about 700 ft. east of Signal C it is on a 0.3 per cent grade ascending eastbound, and from there to the point

Long Island Trustees Resign

The voluntary resignation of David E. Smucker and Hunter L. Delatour as trustees of the Long Island was announced by Judge Harold M. Kennedy in United States District Court at Brooklyn, N. Y., on November 29. Their resignations will become effective as soon as a single successor, to be appointed by Judge Kennedy, has been approved by the Interstate Commerce Commission.

In a statement issued on November 30, Judge Kennedy set December 8 as the date for a hearing on appointment of a new trustee. "I understand," his statement added, "that between now and the hearing date a single successor will be recommended by the new Long Island Rail Road commission. Upon receipt of this recommendation . . . I shall make an announcement concerning the identity of the proposed successor trustee."

Mr. Smucker, it is understood, will continue as chief operating officer until his successor as trustee is appointed and qualified.

of impact is on a descending 0.4 per cent grade.

According to testimony presented at the I.C.C. investigation, William Murphy, motorman of train 780, observed a restricting indication on the Jamaica home signal (114R) and in response thereto began some distance west of that signal to reduce the speed of his train to the required 15 m.p.h. When he had so reduced its speed, he testified, the brakes failed to release and the train continued slowing down, finally coming to a gradual stop just west of Signal 114R. When the signal was changed to clear he was still unable to release his brakes or to start his train. Meantime, however, the stalled train was protected by its own flagman, who was injured in the accident, and by five-aspect Signal C just west of Kew Gardens station. Signal C should at that time have been showing "stop and proceed" — an indication which would require the motorman of any following train to stop and then to proceed at not more than 15 m.p.h., prepared to stop short of any train, obstruction, broken rail or improperly lined switch.

Exceeded 15 M.P.H.

Testimony given to the I.C.C. by Howard Austin, conductor, and Trainmen James J. Houlihan, Irving Pearsall, and Raymond Jacobs, of the following train, No. 174, while differing in some details, indicated that that train did stop at Signal C; and that it then proceeded as allowed to do, but that it accelerated to a speed considerably in excess of the required 15 m.p.h. Three of the four crew members named testified that the motorman made an emergency brake application and reversed ("bucked") his motors in an effort to stop the train some time after it passed Kew Gardens station, both actions occurring almost simultaneously with the impact of the collision. J. J. Ortlieb, Long Island engineer of motive power, testified, however, that subsequent examination showed no evidence of such action.

The collision telescoped the head car of Train 174 through and partially under the rear car of Train 780, completely destroying both units and pushing Train No. 780 forward about 75 ft. Practically all of the deaths occurred in the two telescoped cars. Otherwise there was comparatively little damage to equipment, only one other car being derailed, and virtually no damage to track, but H. M. Cooke, general claim agent of the Long Island, has informally estimated that claims for death and injuries to passengers would probably be in excess of $5 million.

No specific information is presently available as to the cause of the apparent brake failure on Train 780. The brakes had been tested prior to its departure from Pennsylvania Station, and Motorman Murphy had made the customary 20-lb. running road test just after the train left that station. The brakes on Train 174 had been tested at Jamaica; had performed satisfactorily on one occasion while equipment for the train was being deadheaded into Pennsylvania Station; had been tested there; and had, according to testimony of crew members, responded satisfactorily to the running test made just after departure. Brotherhood attorneys attending the I.C.C. hearings brought out, however, that the brake test at Pennsylvania Station had been confined to the first and last cars of each train, in violation of railroad rules, which require that brakes on all cars be tested.

Neither is information available as to the exact speed at which Train 174 was traveling when it struck Train 780. Two of its crew members estimated its speed at between 30 and 40 m.p.h., but pointed out that in view of the darkness, the crowed condition of the train and their preoccupation with collection of tickets, they could not be sure of the speed. Other crew members did not attempt to estimate the speed. Railroad officers have stated that it would have been possible for the train to have accelerated to a considerably higher speed in the 3,516 ft. between Signal C, where it stopped, and the point of impact.

Observation and tests of signals, begun immediately after the collision and continued for several days, indicate that they were working properly, and subsequent inspection of brake equipment on the undamaged cars indicates that it also was in operating condition.

Various employees testified to having talked with Motorman Pokorny prior to Train 174's departure from Pennsylvania Station, and that he seemed in normal condition. He was reported to have "an excellent reputation" and a good 31-year record, clear of any violations since December, 1942.

The petition for removal of the road's two trustees was filed on November 27 with Judge Harold M. Kennedy, who has jurisdiction over reorganization proceedings of the railroad, in United States District Court at Brooklyn, N. Y., by Nathaniel L. Goldstein, attorney-general of New York state; John P. McGrath, corporation council of New York City; and Orrin G. Judd, special counsel for Nassau and Suffolk counties. The petition was denied without prejudice by Judge Kennedy on November 30, on the ground that the voluntary resignation of the two trustees on that same day, as reported elsewhere on this page, made the petition "academic." "

Duties of Special Board

Meantime, Governor Dewey, after conferring with city and county officials, had appointed the board mentioned above to "make a sweeping study and report within 60 days on the problems of the Long Island." The board is headed by Robert P. Patterson, former secretary of war, and includes Robert Moses, New York City park commissioner and construction coordinator, and Charles C. Lockwood, a retired justice of the New York State Supreme Court, and a former member of the old New York State Transit Commission. The board was instructed to:

"1. Study the basic causes of the present conditions of the Long Island Rail Road.

"2. Determine a means of getting the road out of the bankruptcy courts at the earliest possible moment.

"3. Prepare a report to determine whether the road should, in the public

FLASHING A GENUINE "MARS" LIGHT, as well as a regular locomotive headlight, this large, illuminated billboard has proved to be quite an eye-catcher in Kansas City, Mo., where it was recently erected near Union Station by the Chicago, Rock Island & Pacific. The billboard itself measures 32 ft. by 40 ft. The Diesel locomotive cutout projects an additional 8½ ft.

interest, be operated by: (a) The present or past management; (b) other private management; (c) a public authority; (d) a combination of public and private management.

"4. Determine whether it is practical to integrate the rapid transit facilities of the Long Island Rail Road with the New York City rapid transit system on a self-sustaining basis, leaving the railroad to be operated solely as a main-line railroad.

"5. Propose state and federal legislation to rid the Long Island of the present multiple, overlapping and conflicting control by local, state and federal authorities.

"6. Propose a complete program for the permanent operation of the railroad with efficient service and maximum safety to the traveling public as the paramount considerations."

The accident followed by a little over nine months the near-head-end collision between two Long Island trains on a temporary gauntlet track at Rockville, Centre, N. Y., on February 17, in which 31 persons were killed and 158 injured. (See *Railway Age* of February 25, 1950, page 56; April 1, page 63; and May 6, page 39.)

Lincoln Antitrust Case Indefinitely Continued

Federal Judge John M. Delehant, at Lincoln, Neb., has granted an indefinite continuance in the time for filing further pleadings in the government's antitrust action against rate-making procedures of a number of western railroads. The continuance was granted to permit the Department of Justice to test in the United States Supreme Court the validity of Interstate Commerce Commission orders approving specific rate-making procedures submitted by the railroads under provisions of the Reed-Bulwinkle Act.

R.E.A. Strikers May Win Unemployment Pay

The temporary restraining order granted the Railway Express Agency, to prevent payment of unemployment claims to 2,300 striking workers in the New York-New Jersey area, was dismissed on November 27 by the federal court in Chicago. The court held that the employees involved are "indispensable parties," yet had no representation at the hearing. It also held that the suit was brought against an agency of the federal government without consent, and, further, that the court lacked jurisdiction. However, the court granted a stay, pending an appeal, thereby further delaying possible payment.

As reported in *Railway Age* for November 11, the strike occurred on the day after the Express Agency invoked the services of the National Mediation Board. This, the agency contends, made the strike illegal. The emergency board which made the recommendations settling the strike held that the pay increases granted should be retroactive only to the time the strike terminated.

A majority of the Railroad Retirement Board, i.e., the labor and government representatives, took the position, as a result of this court action, that the strike was not begun in violation of the Railway Labor Act, and therefore payment should be made. However, the carrier member of the board did not join in the majority action before the court.

Final decision is awaiting the outcome of further appeal.

Southern Roads File Views In 28310 Case

Southern Territory railroads, in a statement filed with the Interstate Commerce Commission, have again refused to either support or oppose the commission's "tentative uniform classification" in the No. 28310 proceeding. The statement by the Southern roads was filed in the form of a "rebuttal" to verified statements received by the commission in response to the notice in which it accepted the so-called Greenly exhibit and assigned it proposed-classification status.

As reported in the *Railway Age* of September 2, page 75, the Greenly exhibit was filed as an exhibit in a companion case (No. 28300) by A. H. Greenly, chairman of the Official Classification Committee. In order to progress the 28310 case, the commission decided to use Mr. Greenly's exhibit as a "tentative" uniform classification, and gave interested parties until October 15 to submit their views.

The Southern roads on October 2 filed a petition with the commission asking that the tentative classification be withdrawn. They said a class rate scale to be made effective in No. 28300 must be prescribed before a uniform classification can be adopted. They also said it would be "impossible" for them to file "constructive and intelligent statements" in connection with the Greenly exhibit. The commission, however, denied this petition.

In their present statement, the Southern roads again call the Greenly exhibit "incomplete" and state that "several hundred" changes have already been recommended by the various committees at work on the case.

The Southern roads, in collaboration with those in other territories, have been working on a uniform classification for five years, the statement said. The Greenly exhibit, as far as it goes, represents the railroads' efforts "to comply with the commission's directions," but the exhibit is still a "tentative and incomplete" document which cannot work unless applied in connection with the Appendix 10 scale of class rates prescribed by the commission in 28300.

Discussing the verified statements that were filed by interested parties in response to the commission's notice, the Southern roads noted that "only 99" statements were filed out of the "thousands" of shippers and others who would be affected by the proceeding. Of those statements that were filed, 40 per cent took the position that tentative uniform ratings could not be evaluated until it was known what the uniform class rate would be, the Southern roads said. They added that the character of information received by the commission is "wholly inadequate" for prescribing a permanent uniform classification.

COLONEL J. MONROE JOHNSON, chairman of the Interstate Commerce Commission, gave the Pressed Steel Car Company's new "Unicel" refrigerator-box car (see *Railway Age* of October 14, page 24) a thorough inspection when it was displayed recently to railroad, government and defense officials in Washington, D. C.

I.C.C. Republishes Rules For Transport of Explosives

The Interstate Commerce Commission's consolidatd "Regulations for Transportation of Explosives and Other Dangerous Articles by Land and Water in Rail Freight, Express, and Baggage Services, and by Motor Vehicle (Highway), and Water, including Specifications for Shipping Containers," were this week scheduled for publication in the December 2 issue of the Federal Register. This was announced in a notice by I.C.C. Secretary W. P. Bartel who recalled that a July 19 order of the commission had provided for consolidation and republication of the regulations in order that they might be "more readily available for current use."

Interested persons who are not subscribers to the Federal Register, and subscribers who desire extra copies, were advised by Secretary Bartel that they should place orders with the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Mr. Bartel also advised that the regulations would be republished, "within a few months," in the Code of Federal Regulations, in a volume which may be referred to as: 1949 Edition, Code of Federal Regulations, Title 49,

(Continued on page 79)

Who owns a Railroad Train?

For one of the most remarkable demonstrations of cooperation and standardization you'll find anywhere—just observe a passing freight train.

Each individual car may have come from any one of the several hundred individual roads that —collectively—constitute America's transportation system.

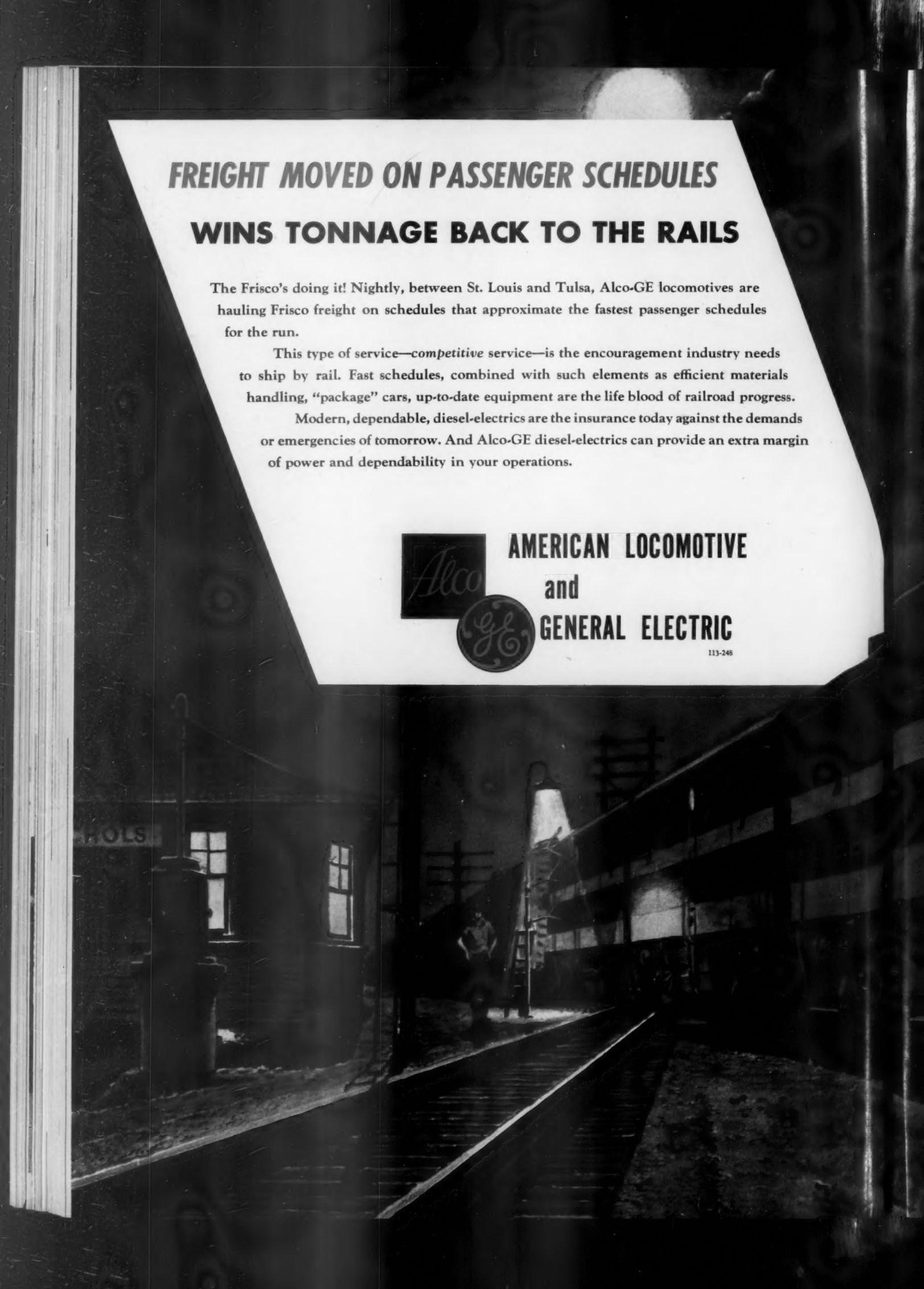
Fifty—75—even 100 different owners may be represented. Yet the equipment on each car must function dependably in conjunction with the equipment on every other. And furthermore—any new and improved equipment must be designed to operate successfully in combination with old, for change-overs on a million and three-quarter freight cars can't be made overnight.

Westinghouse Air Brake Company has met this difficult but essential requirement by continuous research directed at the sole objective of keeping brake progress abreast of transportation progress.

Westinghouse Air Brake Co.

WILMERDING, PA.

To Direct popular attention to the remarkable achievements of American Railroads, this advertisement has been run in national media by Westinghouse Air Brake Co.


FREIGHT MOVED ON PASSENGER SCHEDULES
WINS TONNAGE BACK TO THE RAILS
The Frisco's doing it! Nightly, between St. Louis and Tulsa, Alco-GE locomotives are hauling Frisco freight on schedules that approximate the fastest passenger schedules for the run.
This type of service—*competitive* service—is the encouragement industry needs to ship by rail. Fast schedules, combined with such elements as efficient materials handling, "package" cars, up-to-date equipment are the life blood of railroad progress.
Modern, dependable, diesel-electrics are the insurance today against the demands or emergencies of tomorrow. And Alco-GE diesel-electrics can provide an extra margin of power and dependability in your operations.
Alco
GE
AMERICAN LOCOMOTIVE
and
GENERAL ELECTRIC
113-248

5217

FRISCO

Now!
Sentinel Service dependability
on LCL Shipments — through
B&O Time-Saver Service
TIME-SAVER SERVICE
B&O
T-S
LESS-CARLOAD FREIGHT
Save ⅓ or more in shipping
time, and enjoy the benefits of
available door-to-door schedules.
for details - Ask Our Man!
BALTIMORE & OHIO
RAILROAD
CONSTANTLY DOING THINGS—BETTER!

(Continued from page 74)

Transportation, Parts 71-90 (revised 1950).

This book, the I.C.C. secretary added, will be "in durable form," and will be supplemented by annual comulative supplements; and "for permanent use," it will be "preferable to the Federal Register issue." Persons desiring to be notified of the availability of the book should contact the Superintendent of Documents before January 1, 1951.

Gass Sees Continued Freight Car Shortages

Discussing freight car problems in the current issue of the "National Transportation Situation," Arthur H. Gass, chairman of the Car Service Division, Association of American Railroads, said the supply of box cars remains "extremely tight" in all sections of the country, and the gondola car supply will continue to be a "serious problem" during the next several months.

Box car shortages have decreased somewhat, Mr. Gass pointed out, although during the week ending November 11 there were average daily shortages of 15,689 cars. Meanwhile, gondolas have remained at a "premium" because of heavy production in the steel industry. Recent shortages of gondolas and hoppers have averaged close to 13,000 cars a day, Mr. Gass said.

The C.S.D. chairman said it is anticipated that box car requirements will diminish gradually as harvesting of crops is completed. He noted that all Special Car Orders requiring expedited return of cars to certain roads have been cancelled, although a number of lines continue to require assistance in various parts of the country.

Progress continues to be made in reducing the number of blocked elevators and picking up grain stored along railroad rights of way, Mr. Gass added. There were 537 closed elevators as of November 14, compared to 811 the month before. During the same period, grain on the ground had been reduced from 3,699,000 bu. to 1,201,000 bu.

Turning to his discussion of open top cars, Mr. Gass said requirements continue "very heavy" because of the defense program. Coal loadings through November 11 this year are 19.4 per cent above 1949. Bituminous production this year will likely exceed 500 million tons, as compared to approximately 435 million tons in 1949, Mr. Gass noted.

As to the lake coal program, he said the outlook is "quite favorable," with about 96 per cent completion on the 50-million ton objective for the year. The lake ore situation has also improved, he added. The all-rail ore movement that began in July "has been quite successful," and has accounted for movement of approximately 1½ million tons to the Pittsburgh-Youngstown-Chicago districts.

Because of demands for steel production, it is anticipated that a considerable amount of ore will be moved by rail this winter, provided experimental thawing out operations now being conducted are successful, Mr. Gass continued.

Mr. Gass indicated that demand is easing for freight cars other than box, hoppers and gondolas. He said there should be no difficulty in meeting stock car requirements in the winter months, and noted that demands are already "somewhat relaxed" in the case of flats. Cold weather is also cutting down requirements for covered hoppers in movement of cement and construction materials, Mr. Gass said.

The bad order car situation has continued to improve in the past month, the chairman pointed out. There were 102,899 cars of all types held for repairs as of November 1, compared with 107,398 held on October 1 and 138,640 held on November 1, 1949. Mr. Gass noted that by virtue of continued reduction in bad order cars, serviceable ownership increased for the third consecutive month, representing a gain of 21,878 cars over the three-month period.

Average turn-around time of freight cars in October, as reported by Mr. Gass, was 13.36 days. The comparable figure for October, 1949, was 19.87 days. On the basis of reports from 633 cities and towns in 11 shipper board districts, cars detained beyond free time of 48 hours averaged 16.79 per cent of those placed in October. This compared with 27.74 per cent in September, and 22.88 per cent in October, 1949.

Glenn Joins N.P.A. Staff

Robert L. Glenn has joined the National Production Authority's staff, where he is assisting with the organization of a Transportation Equipment Division. The N.P.A. announcement said that the division's responsibilities include those of "reviewing and recommending materials and equipment requirements for air, water, rail and automotive transportation programs which are approved by other agencies."

Mr. Glenn came to N.P.A. from the National Security Resources Board

Old Time Train Marks Milwaukee's 100th Birthday

A brightly polished 100-year-old steam locomotive and two small day coaches with letter boards reading "Milwaukee & Mississippi Rail Road"—the original name of the Chicago, Milwaukee, St. Paul & Pacific—re-enacted on November 20 the first run from Milwaukee, Wis., to Wauwatosa, which occurred November 20, 1850. Upon its return to the Milwaukee station the little old train was met by a shining new "Hiawatha" speedliner drawn by a giant diesel.

Leo T. Crowley, chairman of the board of the Milwaukee, and John P. Kiley, president, are shown at the meeting of the two trains. The Milwaukee's entire board of directors was present, as were many other railroad officers, city officials and representatives of local civic organizations. The people in costume are from the road's Chicago Choral Club who, with the Hiawatha service club employees' 55-piece band, greeted the beginning of the Milwaukee's second century of service. Also in the group are members of the Milwaukee Players, who impersonated various important city officials and railroad officers of 100 years ago.

Following the pageant at the station, the Association of Commerce sponsored a luncheon meeting at the Schroeder Hotel, with Lester D. Hafemeistre, chairman of the Membership Forum Committee, presiding. Mr. Crowley and Mr. Kiley were the principal speakers. "In common with other railroads, the Milwaukee was left in sub-par shape by World War II," the former said. "Since December 1, 1945, . . . our total expenditures for both locomotives and freight and passenger cars purchased or on order will amount to approximately $115,000,000." In the same period plant additions and improvements cost $44,000,000, maintenance of roadway and fixed property has amounted to $183,000,000, and $210,000,000 was spent for maintaining locomotives and cars.

Following the luncheon a special meeting of the directors was held at which a dividend—the first since reorganization—of $2 a share on the common stock was voted

where he had been director of the Material-Manpower Section of the board's Transportation Office since April, 1948. Prior to that time he was for four years director of the former Office of Defense Transportation's Division of Materials and Manpower. Also, Mr. Glenn was formerly editor of the Brotherhood of Locomotive Firemen & Enginemen Magazine.

Freight Car Loadings

Revenue car loadings for the week ended November 25 were not available when this issue of *Railway Age* went to press.

Loadings of revenue freight for the week ended November 18 totaled 837,065 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, November 18.

District	1950	1949	1948
Eastern	143,547	132,774	151,848
Allegheny	167,268	138,340	173,566
Pocahontas	63,038	74,187	68,311
Southern	138,853	130,916	134,327
Northwestern	120,492	84,781	122,931
Central Western	136,634	132,087	137,559
Southwestern	67,233	65,887	69,547
Total Western Districts	324,359	282,755	330,037
Total All Roads	837,065	758,972	858,089
Commodities:			
Grain and grain products	58,780	51,518	55,075
Livestock	12,731	12,190	15,887
Coal	163,052	210,605	174,273
Coke	16,303	6,618	15,044
Forest products	47,239	42,223	44,024
Ore	51,524	20,412	53,474
Merchandise l.c.l.	85,266	85,061	105,967
Miscellaneous	402,170	330,345	394,345
November 18	937,065	758,972	858,089
November 11	839,612	635,823	871,679
November 4	862,184	578,981	843,586
October 28	887,607	591,315	930,973
October 21	890,990	589,088	926,976
Cumulative total 46 weeks	34,568,955	32,125,333	38,460,946

In Canada.—Car loadings for the week ended November 18 totaled 88,284 cars, compared with 85,170 cars for the previous week, and 82,950 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars	Total Cars Rec'd from Loaded Connections
Totals for Canada:		
November 18, 1950	88,284	34,460
November 19, 1949	82,950	30,477
Cumulative totals for Canada:		
November 18, 1950	3,454,788	1,448,964
November 19, 1949	3,488,305	1,422,319

Roads Have Reservations About Mail-Service Plan

A reply to Postmaster General Donaldson's "Comprehensive Plan" for the transportation of mail has been filed with the Interstate Commerce Commission by the railroads. While in general agreement with the plan, the railroad statement said the postmaster general raises the legal issue of whether it is the I.C.C. or the Post Office Department that has authority to prescribe rules relating to authorizations and units of payments.

The railroads denied that the postmaster general's authority to prescribe service includes the power to prescribe such rules. The railroad statement said that such rules "are a part of the method for ascertaining compensation under the space system of payment and are subject to the jurisdiction of the commission . . ."

The "Comprehensive Plan" was filed, according to the post office, as a statement of the service to be required of railroads in transporting mail. The plan was also filed "to enable the commission to fix fair and reasonable rates" for this service in the future. (See *Railway Age* of November 4, page 75.)

R.E.A. Hearing Postponed

The Interstate Commerce Commission has canceled the January 8, 1951, hearing in the case involving the Railway Express Agency's operating agreement with the railroads. The hearing is rescheduled for April 9, 1951, and will be held in Washington, D. C., before Examiner Hosmer.

At issue in the proceeding are the so-called "exclusive provisions" of the operating agreement. These provisions, which make the R.E.A. the exclusive agency for each contracting railroad in the conduct of express business, are the subject of a Department of Justice antitrust complaint now pending in the United States District Court for Delaware. The I.C.C. entered the case when the R.E.A. asked the commission to reopen a former proceeding, dating from 1929, in which the commission approved acquisition of R.E.A. by the railroads and pooling arrangements for handling of express traffic.

Freight Loss from Theft Down from Last Year

Claims paid by railroads on account of stolen packages of freight were 50 per cent less in the first half of this year than in the corresponding 1949 period, according to William T. Faricy, president of the Association of American Railroads. Claims paid on account of pilfering from packages were down 55 per cent in the same period, Mr. Faricy also reported.

The reductions, he added, "are due in large part to the marked increase in the efficiency of railroad police departments in detecting and preventing theft of shipments in transit." The A.A.R. president noted that railroad police and special agents are located at more than 950 points throughout the United States and Canada, and he declared that "their integrity is attested to by their acceptance by and their close cooperation with city and state police and government agencies, as well as their high standing with the courts."

Besides losses due directly to theft, claims paid by the railroads in this year's first half for losses of entire packages for which causes could not be determined, declined by more than 23 per cent as compared with the same 1949 period, Mr. Faricy also said. He also pointed out that concealed loss, or articles claimed to be short from packages which appeared to be intact when delivered to the consignee, declined by more than 34 per cent.

N.P.A. Orders Cut In Use of Copper

Order M-12, issued by the National Production Authority on November 29, will cut the use of copper for non-defense purposes beginning with the first quarter of 1951. The order limits non-defense production and use of brass mill and copper wire mill products by total weight to 85 per cent in January and February, and 80 per cent in March, 1951—and foundry products to 100 per cent—of the average quarterly production and use during the first six months of 1950.

As to December of this year, the order permits users to consume up to 100 per cent of their average monthly consumption during October and November. Exempt from the order are persons using less than 1,000 lb. of copper or copper-base alloy during a calendar quarter. Copper and copper-base alloy used for maintenance, repair, and operating supplies is permitted at 100 per cent of the base period.

Rail-Barge Joint Rates Deferred Again by I.C.C.

The Interstate Commerce Commission has further postponed, from December 31 until March 1, 1951, the effective date of its order requiring railroads and water carriers on inland waterways to establish through routes and joint rail-water rates reflecting differentials under all-rail rates. The postponement order noted that the railroads' appeal is still pending in the United States Supreme Court.

The court heard argument in the case on November 8 and 9. On the commission's docket the proceeding is No. 26712.

N.Y.-Miami L.C.L. Pool Proposed by Five Roads

A plan for the pooling of l.c.l. freight service between New York and Miami, Fla., was offered this week in an application to the Interstate Commerce Commission.

Five railroads — the Pennsylvania; Richmond, Fredericksburg & Potomac; Atlantic Coast Line; Florida East Coast; and Seaboard Air Line — asked the commission to approve their plan for providing the service through the use of alternate routes from week to week. At present the P.R.R. and R.F.&P. carry l.c.l. as far south as Richmond, Va. From that point the shipments may go via S.A.L. to Miami, or via A.C.L. to Jacksonville, Fla., and then to Miami by F.E.C.

As outlined in the application before the I.C.C., the new arrangement would provide for "the forwarding of shipments via the route over which the

service is provided . . . at the time of receipt of shipment in New York, without regard to the routing specified by shippers, the revenue accruing to the carriers over whose lines the shipments actually move."

The roads said this pooling arrangement will be in the interest of better service and economy of operation and will not unduly restrain competition among the carriers. They said the arrangement was formerly in effect under authority from the now-defunct Office of Defense Transportation.

Roads Bureau Apportions Federal Highway Funds

Apportionment of $400 million of the $500 million authorized as federal aid to the states for highways in the fiscal year beginning July 1, 1951, was announced on November 28 by the Bureau of Public Roads of the Department of Commerce. The funds were authorized by the federal-aid highway act approved September 7.

The $500 million authorized includes $225 million for the regular federal-aid highway system; $150 million for projects on the secondary system; and $125 million for projects in urban areas. The funds are apportioned on the basis of a formula giving equal weight to area, population, and mileage of post roads.

The present apportionments range from Delaware's $1,606,336 to New York's $25,141,039. Other large apportionments include $23,333,713 to Texas, $20,417,231 to California, $18,196,642 to Pennsylvania, $17,712,601 to Illinois, and $15,716,658 to Ohio. The Commerce Department's announcement said that the amount yet to be apportioned would increase the present apportionments by approximately one-fourth.

The apportioned funds will remain available until June 30, 1954. They must, of course, be matched by state funds, federal participation being limited to half the cost of the highway projects involved — except in the public-lands states where such participation may be increased above 50 per cent by one-half of the percentage of the area of the state that is public land.

Second-Quarter Loading Estimates Were 3.2% High

The 13 Regional Shippers Advisory Boards overestimated car loadings for the second quarter of 1950 by 3.2 per cent, according to the latest comparison of forecasts with actual loadings.

Chairman Arthur H. Gass of the Car Service Division, Association of American Railroads, issued the comparison. He noted that while four boards turned in underestimates, the range of overestimates by the remaining boards was from 0.7 per cent to 29 per cent.

By commodities, there was a range from an overestimate of 27.5 per cent in the case of ore and concentrates to an underestimate of 31.5 per cent on cotton seed, soybean-vegetable cake and meal, excluding oil. In addition to that on ore and concentrates, there were overestimates of 15.2 per cent on poultry and dairy products; 13.8 per cent on all grain; 9.8 per cent on automobiles and trucks; 9.4 per cent on livestock; and 4.7 per cent on citrus fruits. The next largest underestimate to that noted above was 26.8 per cent on frozen foods, fruits and vegetables. Other underestimates included 26 per cent on metals (other than iron and steel); 13.4 per cent on vehicle parts; and 13.4 per cent on paper, paper board and prepared roofing.

COMPARISON: ESTIMATED NATIONAL FORECAST, REGIONAL SHIPPERS ADVISORY BOARDS WITH ACTUAL CARLOADINGS— SECOND QUARTER 1950

Board	Carloadings 2nd Qr. 1950 Estimated	Actual	Percentage of Accuracy Over Est'd.	Under Est'd.
Central Western	215,403	218,962		1.7
Pacific Coast	352,513	403,611		14.5
Pacific Northwest	263,431	251,721	4.4	
Great Lakes	608,941	574,862	5.6	
Ohio Valley	1,025,445	1,005,934	1.9	
Mid-West	896,894	877,646	2.1	
Northwest	714,579	507,689	29.0	
Trans-Mo-Kansas	370,126	357,505	3.4	
Southeast	900,194	942,827		4.7
Southwest	467,449	491,787		
New England	123,984	123,179	0.7	
Atlantic States	793,448	764,671	3.6	
Allegheny	1,024,501	988,485	3.5	
Totals	7,756,908	7,508,879	3.2	

C.&N.W. Denied Injunction For Increased Fares

A petition of the Chicago & North Western for a temporary injunction prohibiting the Illinois Commerce Commission from interfering with an increase in commutation fares was denied in Superior court at Chicago on November 20. The court held that, without proof that the commission was arbitrarily delaying the decision or was guilty of misconduct, a court of equity was without power to interfere.

New Plan Controls Truck Overloading for "Defense"

The Department of Defense has moved to prevent "irresponsible truckers" from claiming "urgent military necessity as an excuse for violating weight and size restrictions imposed on highway movements" by the states. The department announced on November 27 that it had sent letters to governors of all states, seeking a means of cooperating with them in dealing with the overloaded-truck problem.

The department proposed that each governor designate one official who will be authorized to grant waivers or permits when requested by authorized military representatives to meet urgent military needs. "Under no circumstances will carriers be authorized to represent the military services in seeking such permits," the department assured the governors.

"The Department of the Army," the Defense Department's statement added, "will be charged with the responsibility for initial establishment of relations with the state representatives named. Thereafter, properly accredited representatives of the three military departments will work directly with the state officials to arrange necessary clearance for important defense highway shipments."

Barker Named D.T.A. Administrative Officer

Clarence Barker has been appointed administrative officer of the Defense Transport Administration. The announcement of his appointment said that he will "direct the administrative management functions of the agency." Mr. Barker came to D.T.A. from the Department of Agriculture, where he was classification officer of the Bureau of Agricultural Economics.

Sees Continuing Demand For Anti-Friction Bearings

Continued heavy demand for anti-friction bearings on new railroad rolling stock has been forecast by SKF Industries. Richard H. DeMott, president, reported that SKF orders call for installation of spherical roller bearing journal box units on 97 diesel-electric locomotive units and 20 of the Budd Company's rail diesel cars. All the diesel locomotive units are of 1,600 hp., intended primarily for freight service.

Retirement Board to Recruit Railroad Manpower

The task of recruiting and supplying both skilled and unskilled railroad workers is being undertaken by the Railroad Retirement Board under the overall responsibility of James K. Knudson, director of defense transport, and in cooperation with the Department of Labor. This reestablishes essentially the same procedure as was followed in recruiting and supplying railroad labor during World War II.

The demand for skilled journeymen has increased sharply in the past two weeks, the board reports, indicating that this type of help may soon be in short supply. The board has undertaken the following steps to carry out its railroad manpower program:

1) Local field offices of the board have been authorized to recruit inexperienced workers, when necessary, as well as experienced railroaders to supply railroad manpower needs.

2) Arrangements have been completed to have local field offices receive and handle orders for workers placed with them by railroads. The board urges railroad officers to place orders for all their manpower needs with these offices, because orders received will be used in summarizing needs, and in negotiating, nationally

"WORLD CHAMPION WHEAT KING," 13-year-old Rickey Sharpe (right), at the world grain championship presentation ceremonies held during the Royal Agricultural Winter Fair in Toronto, Ont., on November 18, when he received the Canadian National trophy emblematic of the wheat growing championship. A. J. Lomas (left), vice-president, Central region, C. N., presented the awards to Rickey on behalf of the road as Lord Digby, deputy president of the Royal Agricultural Society of England, who opened the grain show, looks on

and locally, on matters affecting retention and recruitment of workers.

3) Most railroads and railroad labor organizations have been informed of the board's functions and responsibilities under this program.

4) Arrangements have been made with state employment agencies to cooperate with board offices in recruiting workers for railroads in much the same way as the United States Employment Service did during World War II.

5) In cities where the board does not have offices, state employment offices will accept railroad orders, and recruit workers on the basis of them. In addition, they will immediately relay these orders to the nearest board office.

Floods Delay Trains

Some delay to transcontinental trains operating via the Southern Pacific Overland Route has been reported as a result of floods near the California-Nevada border. Where possible, trains are being rerouted, but it is impossible to tell just where delays may occur or how long they may last while floods continue at their crest.

Division 1's Chairman Now I.C.C. Housekeeper

The Interstate Commerce Commission has transferred duties relating to its so-called "housekeeping" functions from its Division I to the chairman of that division. The "housekeeping" job thus goes to Commissioner Mahaffie, who is the division's present chairman.

As outlined in a notice by Commission Secretary W. P. Bartel, the transfer arrangement provides: "That those housekeeping functions now brought to the attention of the commission by Division 1 for decision, will be brought to the attention of the commission for decision by the chairman of Division 1; that Division 1, other than the chairman thereof, be advisory to the chairman of Division 1 with respect of such housekeeping duties; and that the present relationship between the commission and Division 1, be maintained between the commission and the chairman of Division 1."

The notice listed the housekeeping duties involved as matters relating to salaries and personnel, except as to directors and assistant directors of bureaus; commission finances; changes in commission organization and assignment of duties, except "major changes in organization"; matters relating to the commission building and assignment of space; awarding of contracts for reporting of hearings and arguments; and processing of the commission's annual report.

In addition to Chairman Mahaffie, Division 1 consists of Commissioners Johnson (ex officio as commission chairman), Lee, and Mitchell. The commission's action recalled the defeat in Congress last May of President Truman's proposal to vest in himself the authority to designate the commission's chairman and to make that official responsible for the internal administration of the commission (see *Railway Age* of May 27, page 48). Arguments for that proposal included contentions that the commission needed an improved "housekeeping" set-up.

Siemiller Joins D.T.A. As Director of Manpower

P. L. Siemiller, general vice-president of the International Association of Machinists, with headquarters at Chicago, has joined the Defense Transport Administration's staff as director of the Manpower Division. During the time he is with D.T.A. Mr. Siemiller will be on leave of absence from the union.

In his position with the machinists, Mr. Siemiller supervises that union's activities in nine states in the Midwest. He has served as general vice-president of the union since February 1, 1948. During World War II he was a labor member of the Sixth Regional War Labor Board, and prior to that had represented the machinists' union in the thirteenth region of the National Labor Relations Board. In 1947 he was appointed by President Truman as one of the representatives of American labor to attend the thirtieth session of the International Labor Order at Geneva, Switzerland.

Mr. Siemiller, a native of Nebraska, has worked as a journeyman machinist on the Missouri Pacific, the Illinois Central, and the Missouri & Arkansas, and has been employed by machine job shops doing automotive and truck repair work. His first official position with the machinists was that of general chairman on the M.&A.

Benjamin R. Miller, of American Trucking Associations, who has been on loan to D.T.A. to assist in developing the Manpower Division, will continue to serve as a consultant.

American University Plans Traffic Institute

The American University, Washington, D. C., will conduct its Third Annual Institute of Industrial Transportation and Traffic Management from January 9 through January 26, 1951. Like its predecessors, the institute's course will be under direction of Dr. L. M. Homberger, professor of transportation at the university.

It has been organized with Executive Secretary E. F. Lacey of the National Industrial Traffic League acting as consultant, and with the cooperation of the Army's chief of transportation, the chief of the Air Forces' Transportation Division, and the Navy's Bureau of Supplies and Accounts. The objective, as the prospectus puts it, is "to give present and future junior executives who have a basic understanding of general transportation problems or of traffic management a chance to improve and round out their knowledge and experience."

In addition to Dr. Homberger, the institute's faculty will be composed of industrial traffic managers, railroad executives, and representatives of transportation organizations and government agencies. The group will include Arthur H. Gass, chairman of the Car Service Division, Association of American Railroads; K. N. Merritt, vice-president, Railway Express Agency; W. M. King, assistant vice-president, Southern; E. E. Foulks, superintendent of transportation, Atchison, Topeka & Santa Fe; Giles Morrow, executive secretary and general counsel, Freight Forwarders Institute;

Car Surpluses and Shortages

Average daily freight car surpluses and shortages for the week ending November 25 were announced by the Association of American Railroads on November 30 as follows:

	Surplus	Shortage
Plain Box	1,066	9,183
Auto Box	153	45
Total Box	1,219	9,228
Gondola	344	3,300
Hopper	420	2,989
Covered Hopper	30	33
Stock	459	10
Flat	104	119
Refrigerator	3,232	0
Other	319	341
	6,127	16,020*

*Lowest since week ended June 17.

C. S. Baxter, assistant director, Bureau of Traffic, Interstate Commerce Commission; Ford K. Edwards, former director of the Commission's Bureau of Accounts and Cost Finding and now director of the Bureau of Coal Economics, National Coal Association; and William E. Hayghe, acting director, Traffic and Utilities Management Division, Federal Supply Service, General Services Administration.

Also, there will be two supper meetings with addresses as follows: National Defense Transportation, by Major General F. A. Heileman, the Army's chief of transportation; and Transportation in the Postwar Period, by Interstate Commerce Commissioner Walter M. W. Splawn. The speaker at the closing dinner will be Executive Secretary Lacey of the N.I.T. League.

The university's announcement said that students for the institute may be selected by their employers, and that others may apply by submitting information about their educational background and business experience. No specific previous education is required, and there is no age limit. The tuition will be $90, and former service men are advised that "veterans benefits will be available upon justification that the institute will contribute to the students' present or future business or employment."

Applications should be sent to Dr. Homberger, the American University, 1901 F street, N.W., Washington 6, D. C. The last registration day will be January 4, 1951.

I.C.C. Proposes Changes In Motor Safety Rules

A proposed revision in Motor Carrier Safety Regulations, designed to clarify present regulations and in many cases to strengthen them, has been issued by the Interstate Commerce Commission's Bureau of Motor Carriers.

The commission's latest revision of the regulations became effective January 1, 1940. The proposed new rules were prepared as a result of an investigation instituted in 1946, and include such up-to-date provisions as prohibiting television sets within the range of vision of bus or truck drivers.

Occupying 152 typewritten pages, the new regulations would, among other things, provide the following: Prohibit the scheduling by motor carriers of runs which necessitated driving in violation of speed limits; provide for more comprehensive inspection and maintenance of vehicles; specify many safety devices, including rear bumpers on trucks and trailers and rear wheel flaps to prevent dirt and stones being hurled at other vehicles on the road; and raise the physical requirements of drivers by imposing "modern" eyesight and hearing standards, and by requiring annual physical examinations.

The proposed new regulations were dated November 6, and were made public November 27. An accompanying order by the commission set December 29 as the date by which interested parties must submit their views with respect to the proposed changes.

Georgia Anti-Trust Case Dismissed By High Court

The United States Supreme Court has dismissed the anti-trust complaint brought by the state of Georgia against 20 eastern and southern railroads. This action by the court was taken after the railroads asked that the case be dismissed for reasons stated in Special Master Lloyd K. Garrison's report of last June. (See *Railway Age* of June 17, pages 73-76.)

Georgia had agreed to the dismissal on the condition that the roads agree to pay all costs and expenses not as yet paid, including the special master's fee and expenses. In this connection the court fixed Mr. Garrison's fee at $60,000, with an additional $40,000 to cover expenses.

Chevrier, Crump Analyze Canadian Railway Picture

"Notwithstanding all their difficulties, the railways are continuing to give this country yeoman service," Canadian Transport Minister Lionel Chevrier told a joint meeting of the Chamber of Commerce and the Kiwanis Club of Edmonton, Alta., on November 20, just a day before N. R. Crump, vice-president of the Canadian Pacific, said in an address to the Electric Club of Toronto, Ont., that "Canadian railways aim today to provide the best possible service at the lowest possible cost through modernization of their equipment." "We have every reason, "Mr. Chevrier said," to be proud of our Canadian railways. They are run efficiently, economically and courteously. Every officer and employee has a sense of public responsibility. In so far as lies within their power, they not only maintain but continuously strive to improve the high standards of service we have learned to expect of them.

"The railways have been serving us so long . . . and are so much a part of our daily lives, that we are prone to treat them almost as we do the weather. . . . I suggest that you should not treat the railways as a simple force of nature. They are a human institution. They have a job to do, and I think we owe them some commendation for the way they are doing it, some appreciation of their place in our economy and some understanding of their problems."

"The first and most important" of these problems, Mr. Chevrier continued, "is one of costs. . . . The railways had to meet higher operating costs with relatively limited increase in the unit price charged for the services rendered."

The C.P., Mr. Crump told his audience, is basically still the same railway as was planned and built 70 years ago, but "within this basic structure the railway's capacity has been increased to meet growth of traffic by providing improved standards of heavier rail, larger cars, more powerful locomotives and such other changes as were required to operate and service heavier trains and equipment. . . . The transition from past standards of service to new requirements has in general occurred during the past 18 years of depression and war . . . . Requirements for future rail service are set principally by new economic standards and competitive forms of transport."

To meet these requirements, Mr. Crump said, the C.P. is conducting studies and reviewing transportation bottlenecks and limitations. Improvements to the line will expedite operation of trains and terminal improvements will facilitate handling of traffic. Centralized traffic control, he thought, would obviate the necessity of building double-track lines in Canada.

In rolling stock new freight cars are designed to do the work of two or three old type units, Mr. Crump pointed out. He admitted that in passenger equipment Canadian railways have not advanced as far as those of the United States, but thought the difference in total populations of each country should be considered when criticizing the lack of streamlined trains in Canada. The gas turbine engine is, he said, being watched with great interest. It would be, he felt, a main-line locomotive of great power, while diesels will for many years be used by Canadian railways with their many miles of branch line operations.

Parmelee Strike Over; Transfer Buses Running

After a strike of almost five months' duration, the Parmelee Transportation Company has resumed its transfer service between railroad stations in Chicago. The drivers, members of the A.F. of L. teamsters union, struck for increased wages on July 1. A settlement of an 8½-cents-an-hour pay raise and increased company-paid insurance was reached, and service resumed, on November 27.

During the strike, railroads in the Chicago area established an all-rail baggage transfer service between stations. This service required about 30 baggage cars, and was performed daily. Unused Parmelee transfer coupons were redeemed at all stations for 60 cents.

Sawyer Expands Transport Role of General Fleming

What was described as "action to centralize administration of transportation activities in the Department of Commerce" was taken on November 29 by Secretary Sawyer. The secretary issued an order creating within the department a new Office of Transportation and a Transportation Council, and delegating additional responsibilities to the under secretary of commerce for transportation, Major General Philip B. Fleming.

General Fleming will be chairman

of the council, which will consist also of the chairman of the Civil Aeronautics Board, the maritime administrator, the commissioner of public roads, the civil aeronautics administrator, and the chairman of the Advisory Board of the Inland Waterways Corporation. The secretary's order also gave General Fleming authority to designate a deputy under secretary for transportation, who will serve as chief of the new Office of Transportation.

"Responsibilities of the Department of Commerce in the field of transportation," Secretary Sawyer said, "have been increased by Presidential directives relating to coordination of federal transportation policies and programs, and by the requirements of the mobilization program. Under the departmental order which I have signed the transportation agencies within the Department of Commerce will be in a better position to make a maximum contribution to strengthening the nation's transportation resources to meet the needs of commerce and national security."

As to Under Secretary Fleming's additional duties, the department's statement said they will make him responsible for: "Compiling and analyzing estimates of traffic requirements to be imposed upon existing transportation facilities by the needs of industrial mobilization; determining the adequacy of such facilities to handle the increased load; developing proposals designed to secure the best possible use of existing transportation facilities, and stimulate the provision of needed additional facilities."

General Fleming also has had delegated to him those priorities and allocation powers of the Defense Production Act which relate to air transportation and ocean shipping. Meanwhile, the new Office of Transportation got the Transportation and Communications Division of the department's Office of Industry and Commerce. The new Transportation Council will "advise the secretary with respect to departmental policies in the general field of transportation."

In that role, the council, as the statement put it, will: "(1) Develop coordinated policies and programs of the department's transportation agencies in the interests of successful mobilization of the nation's transportation resources; (2) develop policies and programs designed to enable the secretary to fulfill his responsibilities with respect to the availability and maintenance of transportation resources adequate to meet the needs of commerce and national security."

Three Investigations of Canadian National Crash

The head-on collision of a troop train and the "Continental Limited" on the Canadian National in the Rocky Mountains west of Jasper, Alta., on November 21, is the subject of three independent investigations — by the Canadian Board of Transport Commissioners, by the Province of Alberta, and by the C.N., respectively. Pending the outcome of these investigations, two railway workers have been "automatically suspended" as a result of the crash which killed 16 soldiers and 4 employees. (See *Railway Age* of November 25, page 51.)

In 1947 the Transport Board ruled that wooden passenger cars may be used on a passenger train, but must be placed at the rear of the train. However, the board has defined cars with steel underframe and steel sheathing as being steel cars, which may be operated anywhere in the train. The three lead tourist cars on the troop train, where all the casualties occurred, were of steel underframe and steel-sheathed construction.

ORGANIZATIONS

J. W. Brennan, eastern traffic manager of the Chicago, Burlington & Quincy, at New York, who has been elected president, Traffic Club of New York

The **Traffic Club of Washington, D. C.,** will hold its annual ladies' night dinner dance at the Statler Hotel in Washington on December 6.

The **New England Railroad Club** will hold its "Canadian night" meeting on December 12, at 6:30 p.m., in the Hotel Vendome, Boston, Mass. S. F. Dingle, vice-president—operating, of the Canadian National, will be the guest speaker.

At the recent Phoenix, Ariz., convention of the **National Association of Railroad and Utilities Commissioners** (see *Railway Age* of November 25, page 45), George H. Flagg, public utilities commissioner of Oregon, was elected president of the association to succeed H. M. Miller of the Public Utilities Commission of Ohio. J. C. Darby, vice-chairman of the Public Service Commission of South Carolina, was elected first vice-president; Eugene S. Loughlin, of the Public Utilities Commission of Connecticut, was elected second vice-president; and John P. Randolph, of the Missouri Public Service Commission, was elected general solicitor. Mr. Randolph succeeds Walter R. McDonald, of the Georgia Public Service Commission, who had expressed in his annual report a desire to be relieved of the duties of general solicitor. Austin L. Roberts, Jr., was elected secretary-treasurer and continues in the appointive position of assistant general solicitor. Charleston, S. C., was selected as the site of the association's 1951 convention, at a date to be determined by the executive committee.

The **Chicago chapter** of the **Railway & Locomotive Historical Society** will hold its next meeting on December 8, at 7:30 p.m., at 120 W. Adams street, room 1552. J. W. Barriger, president of the Chicago, Indianapolis & Louisville, will talk on "My Four Years on the Monon." His railroad's new motion picture, "The Hoosier Line," will be shown.

EQUIPMENT AND SUPPLIES

M.P. to Spend $9½ Million For 1951 Improvements

Authority to spend almost $7,000,000 during 1951 for improvements to property was granted the Missouri Pacific Lines by the United States District Court at St. Louis on November 21. This, in addition to previous authorizations totaling $2,540,110 for rail, brings the total budget for improvements in 1951 to nearly $9½ million. Of the $6,889,310 just authorized, $4,785,000 will be allocated to the Missouri Pacific proper, $1,254,600 to the Gulf Coast Lines and $849,710 to the International-Great Northern.

Major improvements scheduled include installation of centralized traffic control between Cliff Cave, Mo., and Middlebrook, 70 mi., and on one of the company's major freight routes between Popular Bluff, Mo., and Dexter. Incidental to completion of the c.t.c. program, present side tracks will be lengthened to accommodate 80-car trains. Total cost of this work is estimated at slightly more than $1,000,000.

Preparatory to operation of planetarium dome cars on the "Texas Eagle," a tunnel at Vineland, Mo., will be eliminated.

Over $300,000 will be alloted for installation of new and improved air-brake equipment on some 1,500 freight cars, with the work to be done at company shops.

The program also provides for equipping 22 locomotives and 28 ca-

Traffic Offices everywhere serve Illinois Central Shippers

ILLINOIS CENTRAL

Look at this map of the United States. In every city shown there is an Illinois Central Traffic Department office, fully staffed to serve our patrons. Wherever you may be, there's an office near at hand and alert to serve you.

ILLINOIS CENTRAL

Main Line of Mid-America

booses with radio for operation between Houston, Tex., Brownsville, and Fort Worth, and installation of some 20 mi. of improved block signaling between Vanderbilt, Tex., and Bloomington.

More than $350,000 is allocated for equipment and improvements at the company's major car shops at Sedalia, Mo., and DeSoto, and North Little Rock, Ark. Slightly more than $150,000 is earmarked for construction of a diesel locomotive facility at Kansas City.

Authorization for an additional expenditure of almost $18 million for acquisition of 124 diesel locomotives and 7 planetarium dome cars was reported in the *Railway Age* of October 28; and of $2,750,000 for 500 70-ton gondola cars in the issue of October 14.

Locomotives

Purchaser	No.	Type	Issue Reported	Builder
Ann Arbor	7	2-unit 3,200-hp. Frt.	Nov. 4	American-G. E.
	2	1,000-hp. Rd.-Switch.	Nov. 4	American-G. E.
	4	660-hp. Switching	Nov. 4	American-G. E.
C. R. I. & P.	8	3-unit 4,500-hp. Frt.	Nov. 11	Electro-Motive
	6	2,250-hp. Passenger	Nov. 11	Electro-Motive
D. S. S. & A.	1	1,000-hp. Rd.-Switch.	Nov. 4	American-G. E.
Long Island	4	2,400-hp. Passenger	Nov. 4	Fairbanks, Morse
	8	1,600-hp. Passenger	Nov. 4	Fairbanks, Morse
L. & N.	22	1,500-hp. Gen. Purpose	Nov. 11	Electro-Motive
	4	2,250-hp. Passenger	Nov. 11	Electro-Motive
M. St. P. & S. Ste. Marie	2	2-unit 3,000-hp. Pass.	Nov. 11	Electro-Motive
	3	2-unit 3,000-hp. Frt.	Nov. 11	Electro-Motive
	2	1,500-hp. Rd.-Switch.	Nov. 11	Electro-Motive
	2	1,500-hp. Rd.-Switch.	Nov. 11	Baldwin
	1	1,500-hp. Rd.-Switch.	Nov. 11	American-G. E.
	5	1,000-hp. Switching	Nov. 11	American-G. E.
M. P.	5	3-unit 4,500-hp. Frt.	Nov. 18	American-G. E.
	2	2-unit 3,000-hp. Frt.	Nov. 18	American-G. E.
	3	2-unit 4,000-hp. Pass.	Nov. 18	American-G. E.
	2	3-unit 4,500-hp. Frt.	Nov. 18	Electro-Motive
	2	2-unit 3,000-hp. Frt.	Nov. 18	Electro-Motive
	5	2-unit 3,000-hp. Rd.-Switch.	Nov. 18	Electro-Motive
	22	1,500-hp. Rd.-Switch.	Nov. 18	Electro-Motive
	17	1,200-hp. Switching	Nov. 18	Electro-Motive
	20	1,200-hp. Switching	Nov. 18	Baldwin
	7#	1,500-hp. Rd.-Switch.	Nov. 18	Electro-Motive
	5#	1,200-hp. Switching	Nov. 18	Electro-Motive
	6**	1,500-hp. Rd.-Switch.	Nov. 18	Electro-Motive
	2**	1,500-hp. Rd.-Switch.	Nov. 18	Baldwin
S. P. & S.	4	1,600-hp. Rd.-Switch.	Nov. 11	American-G. E.

#For the Gulf Coast Lines.
**For the International-Great Northern.

Freight Cars

A. C. & Y.	150	50-ton Box	Nov. 4	Pullman-Stand.
American Refrigerator Transit	500	Refrigerator	Nov. 11	Co. Shops
A. C. L.	500	50-ton Box	Nov. 4	Amer. Car & Fdy.
	800	50-ton Gondola	Nov. 4	Amer. Car & Fdy.
	100	70-ton Gondola	Nov. 4	Amer. Car & Fdy.
	100	70-ton Hopper	Nov. 4	Greenville Steel
	500*	50-ton Pulpwood	Nov. 4	Pullman-Stand.
B. & L. E.	500	90-ton Hopper	Nov. 18	Pullman-Stand.
B. & M.	750*	50-ton Box	Nov. 4	Pullman-Stand.
C. & E. I.	25	70-ton Cov. Hopper	Nov. 25	Thrall Car
C. & N. W.	7	70-ton Cov. Hopper	Nov. 18	Pullman-Stand.
C. B. & Q.	1,000	Box	Nov. 11	R.R. Shops
	400	Flat	Nov. 11	R.R. Shops
	250	Gondola	Nov. 11	R.R. Shops
C. G. W.	600	Box	Nov. 11	Pullman-Stand.
	300	Gondola	Nov. 11	Pullman-Stand.
	150	Flat	Nov. 11	Amer. Car & Fdy.
C. M. St. P. & P.	250	Covered Hopper	Nov. 18	R.R. Shops
	50	Caboose	Nov. 18	R.R. Shops
	30	Gondola	Nov. 18	R.R. Shops
C. R. I. & P.	500	70-ton Gondola	Nov. 18	Amer. Car & Fdy.
C. & S.	250	Box	Nov. 11	R.R. Shops
D. & R. G. W.	10	Caboose	Nov. 18	R.R. Shops
D. T. & I.	300	50-ton Automobile	Nov. 18	General American
	200	70-ton Gondola	Nov. 18	Amer. Car & Fdy.
D. M. & I. R.	300	70-ton Hopper	Nov. 4	Pullman-Stand.
Ft. W. & D. C.	250	Box	Nov. 11	R.R. Shops
Georgia	50	50-ton Box	Nov. 4	Pullman-Stand.
	100	70-ton Gondola	Nov. 25	Amer. Car & Fdy.
	50	70-ton Hopper	Nov. 25	Greenville Steel
G. N.	1,000	50-ton Box	Nov. 4	R.R. Shops
	100	70-ton Cov. Hopper	Nov. 18	Amer. Car & Fdy.
I. T.	10	50-ton Box	Nov. 4	Amer. Car & Fdy.
K. C. S.	600	70-ton Gondola	Nov. 4	Pullman-Stand.
	400	50-ton Box	Nov. 4	Amer. Car & Fdy.
	100	50-ton Automobile	Nov. 18	General American
Lake Terminal	150	70-ton Gondola	Nov. 18	Magor Car
	150	70-ton Hopper	Nov. 18	Magor Car
Me. C.	250	50-ton Box	Nov. 4	Pullman-Stand.
Mather Stock Car	100	40-ton Refrigerator	Nov. 18	Co. Shops
M. & St. L.	700	50-ton Box	Nov. 11	General American
	100	50-ton Flat	Nov. 11	General American
N. C. & St. L.	650	50-ton Box	Nov. 4	Pullman-Stand.
N. & S. S.	100	70-ton Gondola	Nov. 18	Magor Car
N. Y. C. & St. L.	150	70-ton Flat	Nov. 18	Greenville Steel
	50	70-ton Cov. Hopper	Nov. 18	Greenville Steel
N. P.	250	70-ton Gondola	Nov. 4	Amer. Car & Fdy.
St. L.-S. F.	200	50-ton Gondola	Nov. 4	Pressed Steel Car
S. P. & S.	200	50-ton Flat	Nov. 11	Pacific Car & Fdy.
Union	500	70-ton Gondola	Nov. 18	Greenville Steel
Wabash	50	70-ton Gondola	Nov. 18	Amer. Car & Fdy.
Western of Alabama	110	50-ton Box	Nov. 4	Pullman-Stand.
W. P.	600	50-ton Box	Nov. 11	Pullman-Stand.
Y. & N.	150	70-ton Gondola	Nov. 18	Greenville Steel

*To be leased from the Equitable Life Assurance Society.

Passenger Cars

N. Y. S. & W.	16	Coach	Nov. 4	Budd
S. P. & S.	2	Sleeping	Nov. 11	Pullman-Stand.
	1	Coach	Nov. 11	Pullman-Stand.

Domestic Equipment Orders Reported in November

Domestic orders for 15,642 freight-train cars costing an estimated $78,210,000, 237 diesel-electric locomotive units costing about $34,900,000, and 19 passenger cars costing approximately $1,522,000, were reported in *Railway Age* in November. An accompanying table lists the orders in detail. During the first 11 months of 1950, *Railway Age* has reported domestic orders for 128,987 freight-train cars (estimated cost $650,656,600); 2,559 diesel-electric locomotive units, 15 steam and 12 electric locomotives (estimated cost $382,566,000); and 61 passenger-train cars (estimated cost $6,366,000). The number of freight-train cars reported ordered so far this year is larger than for any full year since 1924.

The aggregate estimated cost of railroad equipment reported ordered during this year's first 11 months for domestic service is $1,039,588,600, and exceeds equipment expenditures by Class I railroads in any full year of the preceding 28, according to statistics of the Association of American Railroads. The previous high mark for capital expenditures by Class I railroads for cars and locomotives was the approximately $948,000,000 spent in 1949.

FREIGHT CARS

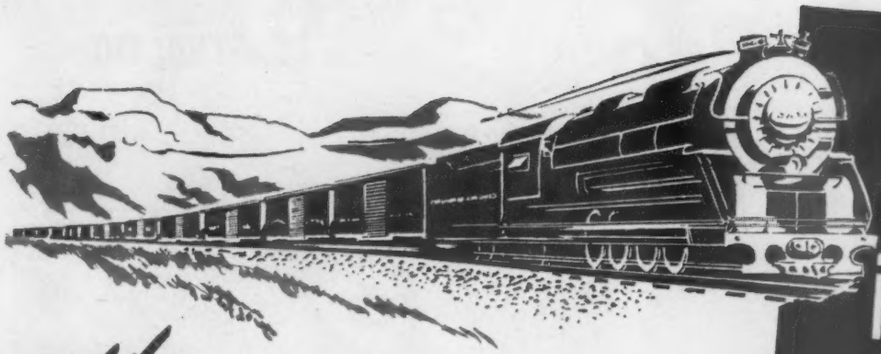
Freight Cars on Order

Class I railroads and railroad-owned refrigerator car lines had 113,071 new freight cars on order November 1, according to the latest issue of "The National Transportation Situation," a monthly review by Chairman Arthur H. Gass of the Car Service Division, Association of American Railroads. This was more than six times the November 1, 1949, total of 17,419 cars.

The breakdown of this year's November 1 total by types of cars was as follows: Box, 50,070; gondola, 26,852; hopper, 20,780; covered hopper, 4,278; refrigerator, 5,927; flat, 3,793.

New freight cars placed in service during October by Class I roads and their car-line affiliates totaled 5,484, while retirements during the month totaled 6,918 cars. During the 12 months ended with October, 38,772 new freight cars were placed in service while 88,236 were retired.

The Gass review also included fig-



A "Haul" in One FOR FREIGHT THAT CAN'T WAIT!

the EXPEDITER

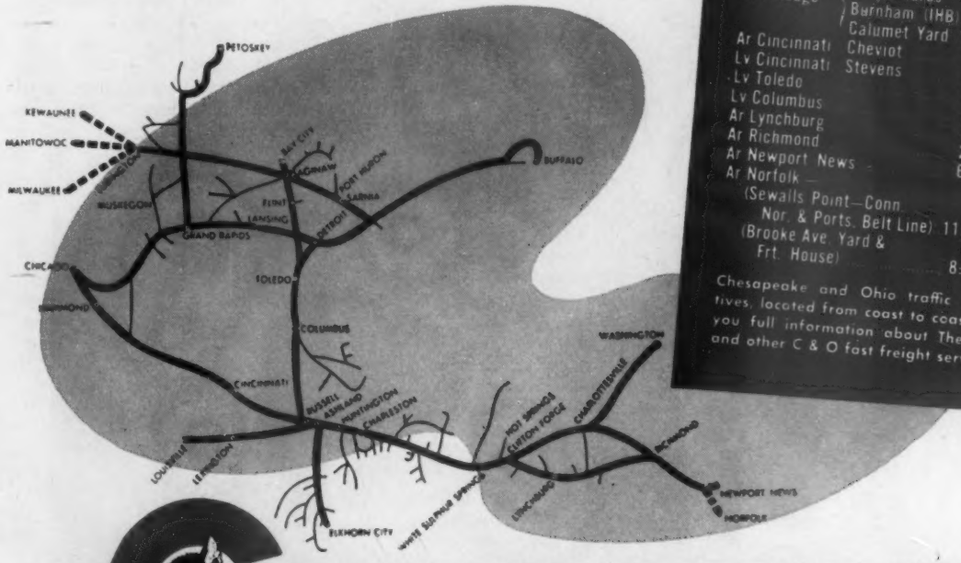
Here's the answer to the question, "What's in a name?" C & O's Expediter daily lives up to its name. Shipments from the Great Lakes region — Chicago, Detroit, Toledo, Cleveland — make second or third day delivery at the Virginia cities of Lynchburg, Richmond, Newport News, and Norfolk, with good connections with the lines serving the Carolinas and the Southeast.

The Expediter is fast; it's dependable. To really expedite your shipments, use the C & O's Expediter.

THE EXPEDITER

Lv Chicago	Clearing	5:00 PM Mon
	Stock Yards	7:00 PM "
	Burnham (IHB)	9:45 PM "
	Calumet Yard	10:00 PM "
Ar Cincinnati	Cheviot	8:00 AM Tues
Lv Cincinnati	Stevens	3:15 PM "
Lv Toledo		8:00 AM "
Lv Columbus		2:00 PM "
Ar Lynchburg		8:55 AM Wed
Ar Richmond		2:30 PM "
Ar Newport News		6:30 PM "
Ar Norfolk — (Sewalls Point—Conn Nor. & Ports. Belt Line)		11:30 PM "
(Brooke Ave. Yard & Frt. House)		8:45 AM Thurs

Chesapeake and Ohio traffic representatives, located from coast to coast, can give you full information about The Expediter and other C & O fast freight services.



THE CHESSIE ROUTE FOR *FAST FREIGHT*

CHESAPEAKE AND OHIO RAILWAY

C AND O FOR PROGRESS

ures on locomotive orders and installations which were released earlier by the A.A.R. and reported in the *Railway* Age of November 25.

The **Gulf, Mobile & Ohio** will order 700 50-ton box, 400 70-ton ore and 300 50-ton gondola cars at a cost of $8,000,000.

The **New York, New Haven & Hartford** has ordered 200 50-ton flat cars from its Maybrook, N. Y., shops for use in the road's truck-trailer service.

The **Union Tank Car Company** has ordered 1,000 50-ton tank cars from the American Car & Foundry Co. Delivery is tentatively scheduled for the second quarter of 1951.

PASSENGER CARS

The **Canadian Pacific** has been authorized to purchase 25 baggage and express cars.

LOCOMOTIVES

Foreign Roads Order 40 Alco-G.E. Diesels

Orders for 40 American Locomotive-General Electric Companies diesel-electric locomotive units have been placed by seven foreign railroads, it was announced this week by Manuel Alonso, Alco manager of foreign sales. The railroads, and the number and type of units ordered by each, are: Consolidated of Cuba—12 1,600-hp. freight units for delivery early in 1951, which, Mr. Alonso said, will be the first main-line diesel-electrics to go into service in Cuba; Portuguese Railway—five 1,600-hp. road-switching units; Algerian Railways—five 1,600-hp. road-switching units; Central of Uruguay—three 1,600-hp. road-switching units; National of Mexico—two 1,600-hp. road units; and the Altos Hornos de Mexico—one 1,000-hp. switching unit.

The **Louisville & Nashville** has ordered 62 diesel-electric locomotive units from the Electro-Motive Division of General Motors Corporation at an approximate cost of $8,300,000. Deliveries are scheduled to begin early next May and extend through mid-July. Included in the order are 13 1,500-hp. road, 10 1,500-hp freight, 25 1,200-hp. switching and 14, 1,500-hp. general purpose units for branch line service. The road units will be operated between Mobile, Ala., and New Orleans, La.; Flomaton, Ala., and Chattahoochee, Fla.; Birmingham, Ala., and Montgomery; Flomaton and Selma, Ala., and Myrtlewood; Georgiana, Ala., and Graceville, Fla.; Bay Minette, Ala., and Myrtlewood; Georgiana, Ala., and Graceville, Fla.; Bay Minette, Ala., and Foley; Nashville, Tenn., and Florence, Ala.; and between Nashville and Decatur, Ala. The switchers will be assigned to Louisville, Ky.; Nashville; Birmingham; Evansville, Ind.; Mobile; New Orleans; and the Selma-Myrtlewood district.

The **Southern** is ordering 100 diesel-electric locomotive units costing an estimated $17,000,000. Orders are being placed with the American Locomotive-General Electric Companies, the Electro-Motive Division of General Motors Corporation and Fairbanks, Morse & Co. Deliveries are expected during 1951.

SIGNALING

The **Chicago, Milwaukee, St. Paul & Pacific** has ordered from the Union Switch & Signal Co. material to install c.t.c. on 2.7 mi. of single track between Tunnel City, Wis., and Raymore. The style B-30 control machine will be installed at La Crosse, Wis., approximately 38 mi. from Tunnel City. Other material includes color-light signals, style M-22B switch machines, relays, rectifiers, transformers and housings. Field installation will be handled by railroad forces.

The **Maine Central** has ordered from the General Railway Signal Company equipment for installation of 12.4 mi. of color-light automatic block signaling, to replace present semaphore signaling between Wytopitlock, Me., and Danforth. Included in this order are type SA searchlight signals, type K relays, and model 8 switch circuit controllers.

The **St. Louis-San Francisco** has ordered from the Union Switch & Signal Co. material to install an interlocking at Southeastern Junction, Mo. The order includes a 2½-ft. style C control cabinet, style H-2 searchlight signals, style M-2 switch machines, relays, rectifiers and transformers. Field installation will be handled by railroad forces.

The **Union Pacific** has ordered from the Union Switch & Signal Co. material to modernize automatic signaling, including respacing of signals, on 127 mi. of single track between Ellis, Kan., and Salina. The order includes searchlight and color-light signals, relays, rectifiers, motor car indicators and housings. Field installation will be handled by railroad forces.

The **Western Pacific** has ordered from the Union Switch & Signal Co. material to extend the Portola-Gerlach centralized traffic control installation on 58.5 mi. of single track eastward from Gerlach, Nev. The order includes material for making necessary additions to the present style C c.t.c. machine at Elko, Nev., to control the new territory. In addition to the code equipment, the order includes style H-2 dwarf and ground searchlight signals, style M-22A switch machines, relays, rectifiers, transformers, and housings. Field installation will be handled by railroad forces.

CONSTRUCTION

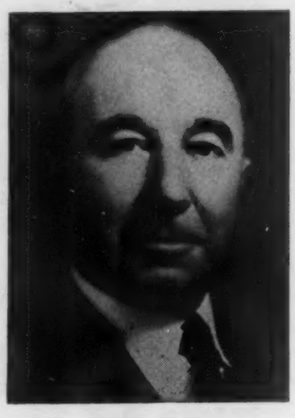
Long Island.—This road is ready to install improved protective devices at 17 grade crossings at a total cost of about $500,000. The program was outlined by railroad officials at a hearing last week before the New York State Public Service Commission on the need for additional protection at the Unqua Road crossing in Massapequa Park, N. Y., where flashing light signals would be installed at a cost of $23,000. Work on the overall program would begin immediately, subject to consent of authorities in communities involved and issuance of permissive orders in each case by the commission. The program would take about one year to complete.

Missouri, Pacific.—See Equipment and Supplies column.

Southern Pacific.—This road has applied to the I.C.C. for authority to construct extensions to two existing lines in Los Angeles County, Cal. The new trackage, totaling 8.56 mi., would be financed from current funds. The extended lines, together with operating rights over a segment of the Union Pacific, would permit the S.P. to speed up freight movements in the Los Angeles area, and would reduce excessive switching time and costs.

SUPPLY TRADE

John E. Dixon, chairman of the board of directors of the **Lima-Hamilton Corporation,** has retired. Mr. Dixon entered the locomotive field in 1900 with Brooks Locomotive Works, which was absorbed a year later by



John E. Dixon

the American Locomotive Company. He was moved from the Brooks plant to the sales department in the New York office of American Locomotive in 1904, becoming assistant sales man-

Christmas "Present" with a Future!

Seven thousand new freight cars just ordered! That brings Central's total since 1945 up to 50,742 new, high-capacity cars. It's a $232,000,000 investment, plus millions more to rebuild older cars. One of the biggest freight car programs in history!

To New York Central freight patrons, it means the gift of smoother, prompter shipping . . . even at today's peak production. But, in a broader sense, these cars are a vast and vital contribution to the future security of every American.

It is the railroad freight car . . . far more than *any* or *all* other forms of transport . . . that mobilizes our productive might for prosperity in peace or strength in defense.

NEW YORK CENTRAL

The Smooth Water Level Route

NEW YORK CENTRAL SYSTEM

ager. In 1916 he was elected vice-president of Lima Locomotive Works, Inc., of which he became president in 1939. He was made chairman of the Lima-Hamilton board in August, 1949. Mr. Dixon is also a director of Franklin Railway Supply Company and Combustion Engineering-Superheater, Inc.

Thomas C. Gray, manager of engineering production of the **Pullman-Standard Car Manufacturing Company,** has been appointed director of engineering. A native of Ozark, Mo., Mr. Gray received his high school education in his home town and at San Bernardino, Cal. He obtained his B.S.

Thomas C. Gray

degree in mechanical engineering from Purdue University in 1923 and M. E. degree in 1927. In 1913 he became employed on the Atchison, Topeka & Santa Fe, and subsequently held various positions on that road. During World War I he was granted leave from the Santa Fe to serve in the U. S. Navy. In 1923 Mr. Gray became chief service engineer for the Locomotive Appliance Company, Toledo, Ohio, and later the same year joined the Missouri-Kansas-Texas as mechanical assistant to vice-president at Dallas, Tex. He was next appointed supervisor of apprentices on the Katy, with which road he remained until 1928, when he joined the Barco Manufacturing Company, Chicago, as chief engineer. In 1939 he was appointed to a similar position with the Franklin Railway Supply Company, at New York. From 1942 to 1946 he served as a captain in the U. S. Navy, being stationed first at Washington, D. C., and later in Guam. In 1946 Mr. Gray became associated with the Treadwell Engineering Company, Easton, Pa., as assistant to president, and in 1948 joined the American Engineering Company, New York, as manager. Mr. Gray has been associated with Pullman-Standard since 1949, when he became manager of engineering production.

FINANCIAL

W.P. "Sells" Mortgage Bonds with Special Train

"Sell yourself," might be the motto the Western Pacific has adopted to stimulate interest in financial circles in bidding on a forthcoming issue of $22 million of first and refunding mortgage bonds. President Frederic B. Whitman and other officers of the road were hosts to representatives of about 50 leading financial houses in New York, Boston, Mass., Philadelphia, Pa., Hartford, Conn., Chicago, and Pacific coast cities, on a special train starting out of Salt Lake City on November 27. The tour, which was labeled "Operation Blue Chip," was designed to show the principal features of the road's operations.

The $22 million bond issue will be used to retire $10 million in existing 4 per cent first mortgage bonds and $6,133,000 of 4½ per cent general mortgage bonds, with the balance being used to replenish treasury funds spent for improvements.

Bangor & Aroostook.—*Collateral Trust Bonds.*—The Reconstruction Finance Corporation has announced that it has approved the sale of three additional lots (each of $100,000 principal amount) of this road's collateral trust 4 per cent bonds due July 1, 1961, at 102 and accrued interest. A previous lot of $100,000 was sold recently at the same price. As noted in *Railway Age* of November 4, page 94, the R.F.C. is offering for sale a total of $3,000,000 of the collateral trust bonds.

Central Vermont.—*Acquisition.*—This road, a wholly owned subsidiary of the Canadian National, has applied to the I.C.C. for authority to acquire control of the New London Northern by purchasing 75 per cent or more of the latter's common stock. The N.L.N. extends from New London, Conn., to Brattleboro, Vt., 131.7 mi., and is at present operated by Central under a lease. The two lines together form the eastern terminus of the Canadian National in the United States.

Central proposes to pay $160 a share for the New London stock, although the net cost to the former would be only $141 a share when the purchase price is reduced by quick assets now

Joseph V. Condon, who has been appointed assistant to Vice-President H. V. Gigandet of the Canadian Railroad Service Company, a unit of the Union Carbide & Carbon Corp., with headquarters at Toronto, Ont. Mr. Condon's railroad experience started with the Canadian National in 1928. He joined Canadian Railroad Service in 1941 and was supervisor of maintenance of way at the time of his present appointment

Milton G. Peck, who has been appointed sales manager for the Clark Equipment Company's recently introduced line of powered hand trucks. Mr. Peck formerly was associated with the Yale & Towne Manufacturing Co., as the sales manager of that company's industrial truck division, Philadelphia, Pa.

Franklin M. Finsthwait, formerly eastern sales representative of the Oxweld Railroad Service Division, Union Carbide & Carbon Corp., who has been appointed district sales manager, with headquarters at New York. Mr. Finsthwait began his business career with the Penn Steel Castings Corporation in 1931 and, before joining Oxweld in 1937, was associated with the Bethlehem Steel Export Corporation

FLOATING FREIGHT TRAINS

to beat New York's traffic jam

• Under normal conditions, an average of 750 to 800 cars of east and westbound freight per day pass over the 6 Float Bridges at the Lackawanna Hoboken Terminal.

It would be impossible to build enough bridges and tunnels to provide a jam-proof right-of-way for the tremendous volume of freight that moves to and from New York.

So the Lackawanna "*floats*" whole freight trains across the Hudson River to key docks in the New York area—on car floats like the one shown here.

Whether it's packaged freight, heavy machinery, perishables or bulk traffic, modern Lackawanna efficiency adds up to *preferred handling* for your shipments. That's why so many of the world's great shippers specify Lackawanna—to or through New York.

Lackawanna Railroad

SHIPPERS WHO ARE IN THE KNOW, CHOOSE THE ROUTE OF PHOEBE SNOW

held in the New London's treasury. The Canadian National would advance the necessary funds to finance Central's purchase of the stock. On the basis of $160 a share, acquisition of 100 per cent of New London's stock would cost Central $2,400,000.

The application to the I.C.C. said no consolidation or merger of the two roads is proposed, and Central would continue to operate the New London as lessee-owner. As a reason for acquiring the New London, the Central said it has made improvements on the line totaling $1,597,762, and this investment would revert to the New London at the end of the present lease. That lease would expire in 1990.

Chicago & North Western-Lake Superior & Ishpeming.—*Sale of Branch Line.*—These roads have filed a joint application with the I.C.C. seeking authority for the former to sell to the latter a half interest in the C.&N.W.'s 10.6-mi. branch line between Copps Spur, Mich., and Martins Landing. The L.S.&I. would pay $144,236 for its interest in the line, and the two roads would jointly share and use the segment in the future. The application said the L.S.&I. already is constructing a branch line in this area, but the proposed purchase would decrease the amount of construction necessary by about 4 mi.

Helena & Northwestern.—*R.F.C. Loan.*—This road has applied to the I.C.C. for authority to obtain a 10-year $400,000 loan from the Reconstruction Finance Corporation. Proceeds from the loan would be used for operation and rehabilitation, including retirement of all of the road's funded debt. As security for the R.F.C. loan the road would give a first mortgage on its property. The road estimated its annual revenues will be about $377,477, beginning in 1951. It added that it would like to have the funds from the R.F.C. by January 1, 1951.

International-Great Northern.—*Trackage Rights.*—The I.C.C. has postponed from December 1 to February 1, 1951, the entry of an order in connection with the report issued in September, 1949, in which Division 4 advised this road and the Texas Mexican that they should organize a terminal company to handle cars interchanged with the National of Mexico at Laredo, Tex. (See *Railway Age* of October 1, 1949, page 60.) The latest action by the commission states that the record will be held open "to afford the parties an opportunity to present . . . an agreement providing for operation, pursuant to the plan suggested in said report, of such facilities at Laredo." Entry of an order in this case was originally withheld for six months from the date of the report. The time was subsequently extended through December 1, 1950.

Lehigh & New England.—*New Director.*—John I. Kirkpatrick, treasurer of Lehigh University, has been elected to this road's board of directors to succeed the late E. J. Buckley.

New Securities

Division 4 of the I.C.C. has **authorized:**

NEW YORK CENTRAL.—To assume liability for $4,800,000 of equipment trust certificates, to finance in part 1,000 new freight cars costing an estimated $6,006,900. (See Railway Age of November 4, page 94.) The certificates, to be dated November 15, will mature in 15 annual installments of $320,000 each, beginning November 15, 1951. Division 4 approved a selling price for the issue of 99.162 with interest at 2¾ per cent—the bid of Salomon Brothers & Hutzler and three associates—which will make the average annual cost of the proceeds approximately 2.9 per cent. The certificates were reoffered to the public at prices yielding from 1.8 to 2.95 per cent, according to maturity.

Security Price Averages

	Nov. 28	Last week	Last year
Average price of 20 representative railway stocks	47.77	49.25	38.44
Average price of 20 representative railway bonds	96.10	96.20	86.49

Dividends Declared

Chesapeake & Ohio.—common, 50¢, payable December 20 to holders of record December 1; 3½% convertible preferred, 87½¢, payable February 1, 1951, to holders of record January 5, 1951.

Chicago, Milwaukee, St. Paul & Pacific.—common voting trust certificates, $2 initial, payable December 9 to holders of record December 1.

Erie.—common, $1.25, payable December 22 to holders of record December 8.

Kansas City Southern.—common, $1, extra, $1, both payable December 15 to holders of record November 30; 4% preferred, $1, quarterly, payable January 15, 1951, to holders of record December 30.

New York, Chicago & St. Louis.—6% preferred A, $5 accumulated, payable December 20 to holders of record December 4; 6% preferred A, $1.50, quarterly, payable January 2 to holders of record December 4.

RAILWAY OFFICERS

EXECUTIVE

As reported in the November 11 *Railway Age*, **Frank E. Christofferson** has been advanced to office assistant to vice-president—operation of the CHICAGO & NORTH WESTERN, with headquarters at Chicago. Mr. Christofferson was born at Council Bluffs, Iowa, on March 25, 1891. He entered railroad service as a stenographer in the auditor of freight accounts' office of the Union Pacific in December, 1908, at Omaha, Neb. In March, 1912, he joined the North Western at Omaha as secretary to the general manager, being transferred to Chicago in the same capacity in 1918. Two years later he became assistant chief clerk in the general manager's office at Chicago, and from 1925 to 1934 served as chief clerk in the office of the vice-president—operation-maintenance. Later he held the same position in the office of the vice-president and general manager, from 1934 to 1937; the acting general manager, from 1937 to 1938; the general manager, from 1938 to 1940, and chief operating officer, from 1940 to 1944. Prior to his recent promotion Mr.

Frank E. Christofferson

chief clerk in the office of the vice-president—operation since June, 1944. Christofferson had been serving as

As reported in the *Railway Age* of November 25, **Lawrence T. Oliver** has been elected assistant to president of the RICHMOND, FREDERICKSBURG & POTOMAC at Richmond, Va., in addition to his duties as assistant secretary and assistant treasurer. Mr. Oliver was born on February 21, 1906, and received his education in the public schools of Richmond. He entered the

Lawrence T. Oliver

service of the R.F.&P. in the mechanical department in April, 1923, serving in various positions in that department as well as the transportation department. In 1934 Mr. Oliver was appointed secretary to traffic manager and subsequently became secretary to president, chief clerk to president, and assistant secretary and assistant treasurer.

Verl E. McCoy, who has been appointed assistant to vice-president—finance and accounting of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, with headquarters at Chicago, as reported in the November 11 *Railway Age*, is a native of Lincoln, Neb. He received his M. E. degree in 1925

PAGES FROM THE

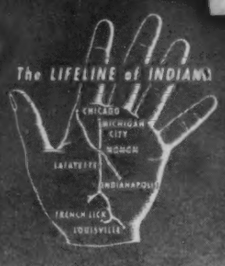
Monon Record of Progress

America's First Completely Dieselized Class 1 Railroad

4 5 6 7 8

80 miles

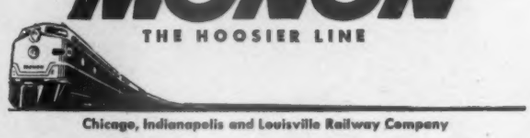
of new 112# and 115# Rail have been laid



MONON progress is a matter of record on two counts: (1) the MONON has the distinction of being America's first completely dieselized Class I railroad. (2) More and more shippers are specifying MONON service-with-a-plus today than ever before in the road's history—and new ones are being added every day. *MONON* means *Business.* A trial will convince you.

MONON

THE HOOSIER LINE



Chicago, Indianapolis and Louisville Railway Company

from Montana State College, entering railroad service the same year as a special apprentice on the Milwaukee. In 1928 he became combustion engineer, in which post he remained until 1930, when he joined the Bird Archer Company as assistant to the president

Verl E. McCoy

—mechanical engineering. He served as mechanical engineer and treasurer of the Wilson Engineering Corporation from 1931 to 1936, as superintendent of the Montana Iron Works from 1936 to 1937, and as chief engineer of the National Aluminate Corporation from 1937 to 1948. Subsequently Mr. McCoy became manager of the railroad weed control department of the National Aluminate Corporation, and prior to his recent appointment on the Milwaukee, served for one year as president of the Mutual Engineering Service Company of Chicago.

FINANCIAL, LEGAL & ACCOUNTING

As reported in the *Railway Age* of November 4, **Raymond Hector Ely** has been appointed auditor of disbursements of the DELAWARE & HUDSON at Albany, N. Y. Mr. Ely was born on August 24, 1891, at Hector, N. Y., and was graduated from high school at Sayre, Pa., in June, 1909. He entered railroad service in August, 1909, with the Lehigh Valley accounting department at Sayre as shop timekeeper, becoming transportation timekeeper in July, 1914, and transportation accountant in September, 1916. Mr. Ely joined the D. & H. in February, 1917, as head transportation clerk in the office of the division accountant, becoming head clerk in the office of the auditor of disbursements in July, 1918; engineering accountant in February, 1921; supervisor accounting bureau in office of auditor of capital accounts at Albany in August, 1926; and acting division accountant at Colonie (Watervliet), N. Y., in January, 1927. Mr. Ely was division accountant at Colonie from December, 1928, to October, 1935, when division offices were abolished and accounting centralized in the auditor of disbursements' office at Albany. From November, 1935, to September, 1949, he was supervisor of various accounting sections in that office. Mr. Ely was assistant to auditor of disbursements from October, 1949, until his recent promotion to auditor of disbursements.

OPERATING

F. J. Cramer has been appointed trainmaster of the Buffalo division of the NEW YORK CENTRAL at Buffalo, N. Y.

J. D. Henry has been appointed general superintendent and **H. W. Vogenberger, Jr.,** assistant general superintendent, of the LAKE TERMINAL at Lorain, Ohio.

TRAFFIC

H. P. Trieger, division freight agent of the ANN ARBOR at Owosso, Mich., has been appointed general agent at the road's new agency at Cincinnati, Ohio. **George E. Stange,** traveling freight agent, succeeds Mr. Trieger.

C. F. Bosch and **W. F. Custer** have been appointed assistant general freight agents of the CHICAGO & EASTERN ILLINOIS, with headquarters at Chicago. **R. M. McKee** becomes general coal agent at that point.

Elza Curtis, district passenger agent of the CHESAPEAKE & OHIO at Dallas, Tex., has been appointed general agent, passenger department, at St. Louis, Mo.

R. A. Campbell, assistant general agent of the CHICAGO, BURLINGTON & QUINCY at Omaha, Neb., has been appointed general agent, passenger department, at that point.

R. E. Gauen, chief clerk to the freight traffic manager of the LITCHFIELD & MADISON at St. Louis, Mo., has been appointed assistant general freight agent (rates and tariffs) at that point.

Claude F. Lauer, commercial agent of the ERIE at Akron, Ohio, has been promoted to general agent at Cleveland, Ohio, succeeding **E. T. Butler, Jr.,** who has been appointed industrial agent for the Western district, as announced in the *Railway Age* of November 18.

J. S. Branch, general freight and passenger agent of the VIRGINIAN at Norfolk, Va., has been appointed assistant traffic manager.

J. Russell Grant, assistant general passenger agent of the NEW YORK CENTRAL at New York, retired on November 30, in conformity with pension regulations of the company, after 45 years of service.

Horace R. Powell, chief clerk to traffic manager of the RICHMOND, FREDERICKSBURG & POTOMAC, has been elected traffic manager, with headquarters as before at Richmond, Va., succeeding the late **Walter Marshall Taylor,** whose death was reported in the *Railway Age* of November 4. **L. Otto Meyberg** has been elected assistant traffic manager.

Mr. Powell was born on May 5, 1894, and attended the public schools of Richmond. He entered the service of the R.F.&P. in 1911 in the account-

Horace R. Powell

ing department and served in various capacities in that department until transferred to the traffic department in 1931 as chief freight rate clerk. On January 1, 1947, Mr. Powell was appointed chief clerk to traffic manager, which position he held until his recent election as traffic manager.

Mr. Meyberg was born on August 7, 1898, in Ashland, Va., and attended public schools and Randolph-Macon

L. Otto Meyberg

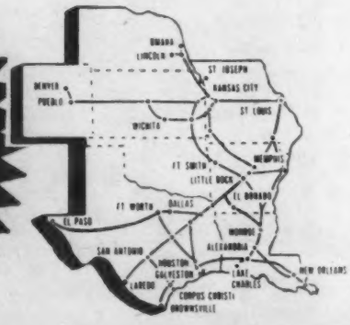
College. He entered the service of the R.F.&P. on June 12, 1917, later serving in the United States Army during World War I. In December, 1918, he became associated with the freight claim office of the Southern. Returning to the R.F.&P. on April 6, 1920, as claim adjuster, he served in various capacities until his recent election as assistant traffic manager. Mr. Meyberg

(Continued on page 101)

Move Perishables via

Missouri Pacific's modern, efficient handling of freight shipments means faster and finer rail service for you and your product. New equipment, operating over miles of well-maintained roadbeds, can expedite your shipments from the great West-Southwest area to Northern and Eastern markets.

MISSOURI PACIFIC LINES



SERVING THE WEST–SOUTHWEST EMPIRE

Right on the nose

THE WINGED DIAMOND on the nose of this Erie diesel is more than decoration – it stands as a symbol of high performance. As a matter of fact, you needn't go any further than this same diesel to find a good example of what we mean.

For it is this forward-looking policy that has given the Erie a well-earned place among the top railroads of America. Today, Erie's roster of diesel locomotive units totals 399 in use, or on order. This is one of the highest percentages of diesel ownership among eastern railroads.

These modern locomotives provide the smooth power for Erie passenger trains and the brawn that is presently hauling 70% of all freight over the Erie's 2,200 miles of railroad. Their record shows up in improved schedules and in better on-time performance.

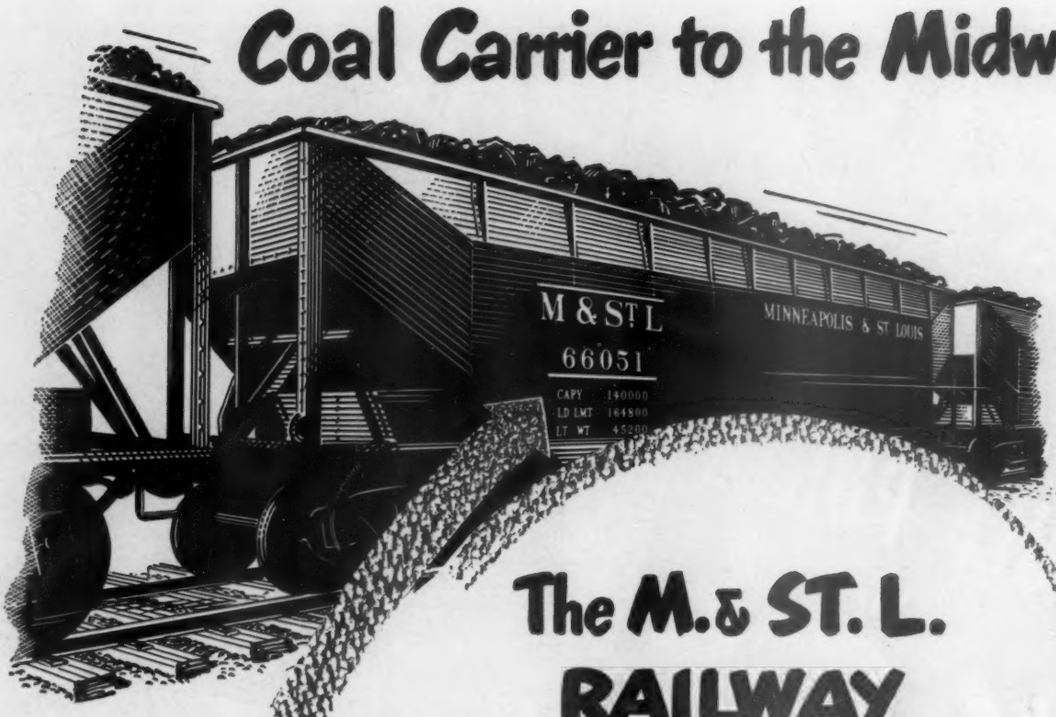
So when you see this winged Erie diamond, think of it as the symbol of Erie's continuous search to improve the safe, dependable transportation of both passengers and freight. It's all there – "right on the nose!"

ERIE

Erie Railroad

Serving the Heart of Industrial America

Coal Carrier to the Midwest



The M. & ST. L. RAILWAY

Winter has come to the Great Midwest and the white of glistening snow has followed the red and gold of Autumn in forest, field and meadow. The Midwest has done a good job of storing fuel for the cold months but big stocks have to be maintained.

As in most regions, Coal is the great basic fuel for heat and power in Minnesota, South Dakota, Iowa and Illinois, the four states served by

The Minneapolis & St. Louis Railway

Coal therefore ranks high among freight commodities transported by the M. & St. L. The Railway hauls Coal from two large mines that it serves directly in Illinois; and delivers strings of loaded cars, received from connecting roads at the time-saving Peoria Gateway, to industries and Coal yards throughout its great fuel-consuming territory.

In 1949, the M. & St. L. transported nearly 2,000,000 tons of Coal. This was less than in most recent years but the 1950 tonnage is larger.

M. & St. L. Coal carrying equipment includes about a thousand gondola and hopper cars—all new in the past five years and all in

Fast Freight Service **For Producers, Distributors and Consumers of Coal**

80

READ
"Mileposts on the Prairie" the story of The Minneapolis & St. Louis Railway, a great railroad book by Frank P. Donovan, Jr. At your bookstore or Simmons-Boardman Publishing Corp., 30 Church Street, New York 7, N.Y.

The **Minneapolis & St. Louis** *Railway*
Fast Freight Service via the Peoria Gateway

YOUR OVERSEAS SHIPMENTS Move Faster—Cost Less When You

Ship Through the GULF PORTS via KCS DIESELIZED FREIGHT

YES, it's faster—and costs less—because your shipments move *directly* and are *handled efficiently*. KCS Dieselized Freight speeds your shipments over the shortest, fastest route between Mid-America and the Gulf Ports—New Orleans, Port Arthur, Baton Rouge, Beaumont and Lake Charles—where modern facilities cut handling charges to a minimum.

J. W. SCOTT
Vice President—Traffic
Kansas City, Mo.

KCS 77 SPEEDS YOUR SHIPMENTS TO THE GULF PORTS AND THE SOUTH-SOUTHWEST

This fast "on time" dieselized freight catches fast connections from the North, West and East, and rolls south from Kansas City at 8:40 nightly with the "hurry-up" freight.

For FREIGHT With a DATE— It's KCS Lines!

PORT ARTHUR

World-famous shipping center for petroleum products and chemicals. Its modern dock facilities handle millions of tons of cargo annually. Last year alone, Port Arthur and the other Gulf ports that make up the Sabine Customs district handled a combined tonnage greater than that of any other customs district except New York.

Other great Gulf Ports—New Orleans, Baton Rouge, Beaumont and Lake Charles—are featured in this series.

L.C.L.

FREIGHT MERCHANDISE SERVICE

fast and dependable

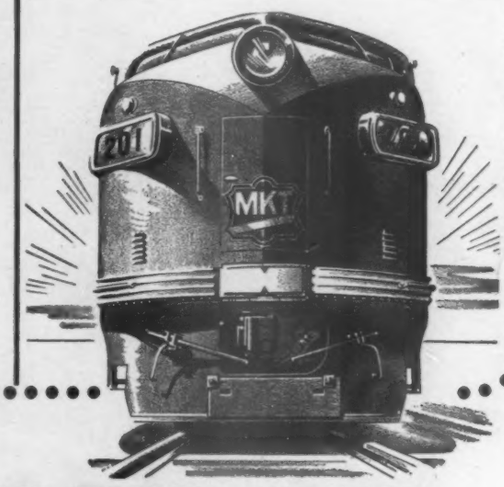
via KATY KOMET

and other Katy Fast Freights

to and from

MISSOURI, KANSAS, OKLAHOMA and TEXAS

speeds shipments whatever their size



COORDINATED RAIL-TRUCK SERVICE

Just phone your nearest Katy representative and tell him *what* you have to ship and *where* it's going.

From then on, Katy's safe, modern, ON-TIME *L. C. L.* service takes over until shipment is delivered to your customers' door.

Free pick-up and delivery
***from* and *to* shippers' door**

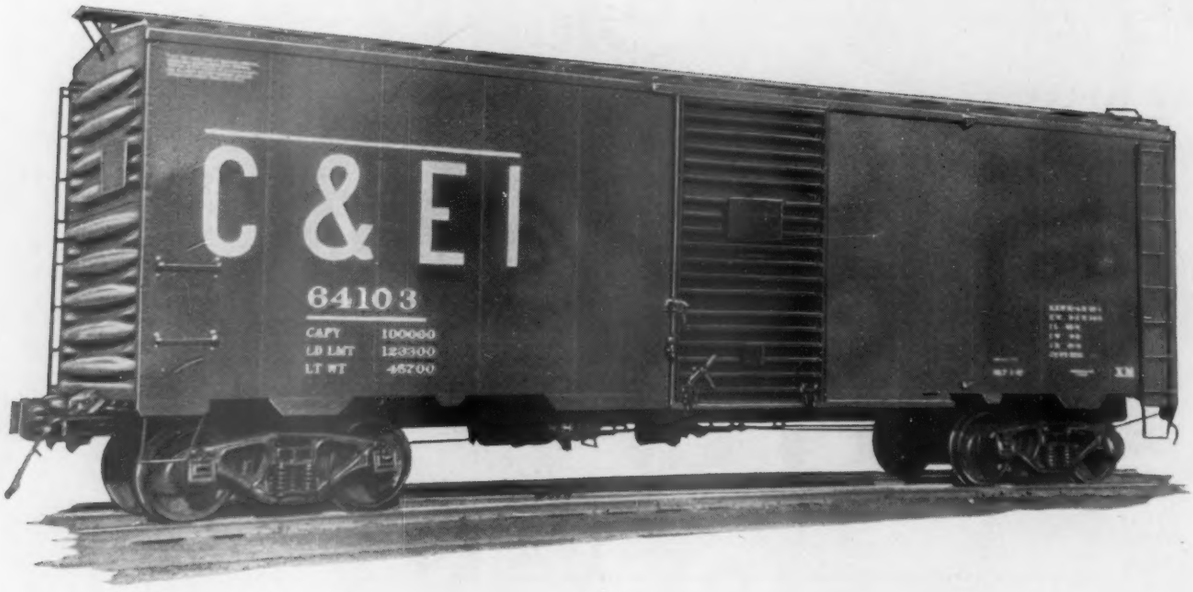
All cars are worked at our freight houses day of arrival.

Contact your Katy representative for details

the Katy

M·K·T
MISSOURI-KANSAS-TEXAS

NATURAL ROUTE SOUTHWEST



We're *doubling* our box-car fleet!

America must have thousands of new freight cars to meet the defense emergency. The railroads are doing their utmost to meet the need. In that spirit, the Chicago & Eastern Illinois Railroad has placed orders that will increase its box-car ownership *more than 100%* in 1951.

C&EI

CHICAGO & EASTERN ILLINOIS RAILROAD

(Continued from page 94)
is vice-chairman of the Virginia Claim Conference.

P. E. Reineke, car accountant of the TERMINAL RAILROAD ASSOCIATION ST. LOUIS, at St. Louis, Mo., has been appointed also general freight agent. Mr. Reineke's jurisdiction has been extended to include the department of the agent and freight auditor, which duties were formerly performed by **W. L. Eifert,** who has retired after 50 years of service. The positions of general agent and car accountant and agent and freight auditor have been abolished.

George F. Ehlen, general freight agent of the SPOKANE, PORTLAND & SEATTLE, with headquarters at Portland, Ore., has been appointed assistant freight traffic manager. **E. H. Block,** assistant to general freight agent, has been advanced to assistant general freight agent. Mr. Ehlen was born at Minneapolis, Minn., July 9, 1892, and entered railroad service in 1911 in the joint offices of the Northern Pacific and the Great Northern at Anoka, Minn., where he remained until 1918. After spending one year in military service, he returned to railroading at Anoka, and in 1920 went to Portland to work in the local freight office of the S. P. & S. Mr. Ehlen was transferred to the traffic department in 1923 and subsequently held various positions in that department. In 1929 he became city freight agent at Portland, and from 1933 to 1941 served as traveling freight and passenger agent in the Willamette Valley and Columbia river territories, later being appointed general agent at Portland. He was made assistant to general freight agent in August, 1943, and promoted to general freight agent in December, 1944.

MECHANICAL

E. L. Hyatt, assistant master mechanic of the BOSTON & ALBANY, has been appointed master mechanic, with headquarters as before at Boston, Mass. The position of assistant master mechanic has been abolished. **R. F. Batchman,** assistant master mechanic of the New York Central, Lines Buffalo and East, at Syracuse, N. Y., has been appointed superintendent of shop (diesel) of the B.&A. at West Springfield, Mass.

SPECIAL

With the appointment of **Walter W. Rodie,** advertising agent of the CHICAGO, ROCK ISLAND & PACIFIC, as advertising manager, the road's advertising department has been alined with its public relations department. **William E. Hayes,** executive assistant in charge of public relations, assumes general supervision of advertising activities.
(Continued on page 103)

Sure in all weather

Santa Fe freight service

Your freight moves by the clock—not by the weather—when you ship via Santa Fe.

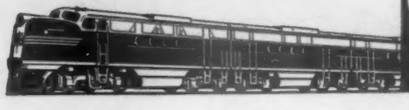
Modern all-weather dispatching methods speed freight through terminals and a powerful fleet of diesel locomotives keep traffic rolling along the line to give dependable on-time arrival at destination.

Even Santa Fe's main freight routes are favored by nature for all-weather operations as these routes are without extreme changes in temperature or climate.

It pays to ship Santa Fe—*the dependable all-weather-way.* For information call your nearest Santa Fe freight representative.

F. H. Rockwell, *General Freight Traffic Mgr.*
Santa Fe System Lines, Chicago 4, Illinois

Santa Fe—*all the way*

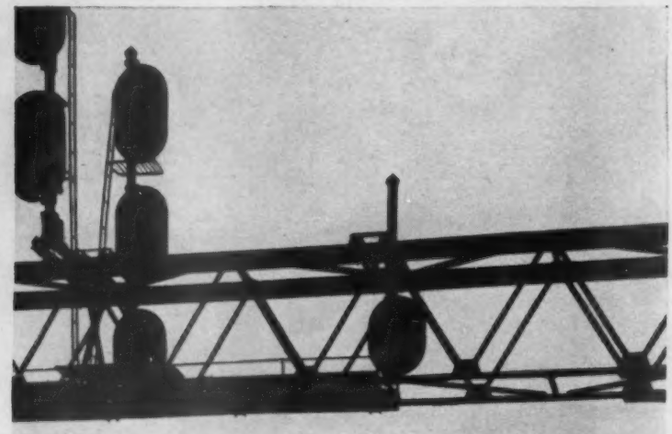


Santa Fe

Mile after mile

ESSO COBLAX lubricants are available in a wide range from fluid oils to semi-solid products. They are providing highly dependable lubrication for traction motor gears, and many other locomotive and car lubrication requirements.

PROVED ON THE RUN— Coblax 2000, 3000 and 5000 are widely used as gear lubricants in the traction motor drives on electric and diesel-electric locomotives; gas-electric and multiple-unit cars.



The Sign of QUALITY — ESSO — The Symbol of SERVICE

RAILROAD PRODUCTS

SOLD IN: Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Penna., Del., Md., D. C., Va., W. Va., N. C., S. C., Tenn., Ark., La.

ESSO STANDARD OIL COMPANY—Boston, Mass. — New York, N. Y. — Elizabeth, N. J. — Philadelphia, Pa. — Baltimore, Md. — Richmond, Va. — Charleston, W. Va. — Charlotte, N. C. — Columbia, S. C. — Memphis, Tenn. — Little Rock, Ark. — New Orleans, La.

PROVED IN THE LAB— constant follow-up by Esso scientists and technicians in America's largest petroleum laboratories makes doubly sure that you always get quality and dependability with products that bear the Esso Brand.

PROVED ON THE JOB— Esso Sales Engineers make sure that Esso Products give dependable performance. For any railroad fuel or lubricating problem, call on ESSO.

OBITUARY

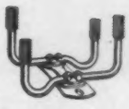
Sidney Lyons Altschuler, director of dining service and commissary departments of the MISSOURI-KANSAS-TEXAS, with headquarters at San Antonio, Tex., died of a heart attack in that city on November 22. Mr. Altschuler was born at Ottumwa, Iowa, on May 16, 1894, and attended high school at Kansas City, Mo. He was later a student at the University of Kansas. From 1911 to 1927 he was associated with Frankel, Frank & Co., Kansas City, and subsequently became head of an automobile agency. In 1931 he joined the staff of the Katy's traffic department at Kansas City, and early in 1947 became director of dining service and commissary departments.

Lawrence E. Thornton, superintendent of the BALTIMORE & OHIO CHICAGO TERMINAL, with headquarters at Chicago, died at St. Luke's hospital in that city on November 21. Mr. Thornton was born on August 7, 1900, at Browning, Ill. He attended grade school at Ridgefield, Ill., and high school at Rushville, Ill., receiving his higher education at Miami University, Oxford, Ohio. In 1923 he entered railroad service with the Chicago, Burlington & Quincy, and after holding various positions with that road, in 1925 he joined the Alton (now Gulf, Mobile & Ohio). Mr. Thornton served successively with the Alton as instrument man, assistant engineer, assistant division engineer, assistant trainmaster and trainmaster. In January, 1942, he went with the B. & O.C.T. as superintendent, leaving that post in January, 1943, to serve with the 741st Railway Operating Battalion of the U. S. Army. He turned to the B.&O.C.T. in June, 1946, as superintendent.

Fred Lavis, retired consulting engineer and transportation authority, died on November 24 at Phoenix, Ariz., at the age of 79. Mr. Lavis was born on January 8, 1871, at Torquay, Devonshire, England, and entered railroad service in 1890 as rodman with the Boston & Maine. He subsequently served in various capacities in the engineering departments of the New York, New Haven & Hartford; New York Central; New York, Westchester & Boston (now abandoned); Boston & Maine; Choctaw, Oklahoma & Gulf (Chicago, Rock Island & Pacific); Chihuahua & Pacific (Mexico North-Western) and Cartagena-Magdalena (in Colombia, South America). From 1905 to 1909 Mr. Lavis was resident engineer on the Pennsylvania's North River tunnels into New York. After 1909 he was in private engineering practice, specializing in South and Central American railroads. He also engaged in railroad engineering in Spain, Italy and China. Mr. Lavis was president of the International Railways of Central America from 1928 to December, 1931, and mayor of Scarsdale, N. Y., from 1930 to 1932. He was the author of numerous technical papers.

use this comprehensive, local service

Graybar's Railroad Department can help you select, obtain, and apply the best items for any pole-line project



Graybar distributes everything in railway pole-line hardware, including specially designed point-type transposition brackets for single and three channel telephone carrier circuits.

Graybar also supplies wood and steel poles and cross-arms; porcelain, glass, and rubber insulators; standard BB and extra-high-strength iron telephone wire, as well as a full range of other conductors; connectors; line-protective devices; linemen's tools and safety equipment.

At the Graybar office and warehouse near you, there are specialists who can save you time in obtaining first-quality items for *all* your electrical needs, including railway communication equipment, lighting and lamps, repair-shop power apparatus and electric tools. *Graybar Electric Company. Executive offices: Graybar Building, New York 17, N. Y.*

4945

OFFICES AND WAREHOUSES IN OVER 100 PRINCIPAL CITIES

cut maintenance COSTS caused by RUST

RUST-OLEUM
Stops Rust!

Applying Rust-Oleum to car parts by dipping—a practical, economical method for railroad use. Rust-Oleum can also be brushed on or sprayed.

● Costly rust—a needless waste—is preventable. It can be stopped easily, positively, economically! Railroads from coast to coast find RUST-OLEUM the perfect answer to their most difficult rust problems. An *exclusive-type* coating, RUST-OLEUM was formulated to combat the most destructive rust conditions. It provides *long-lasting* protection for rolling stock, bridges, tanks, metal buildings, signal equipment and other railroad properties.

RUST-OLEUM can be applied over metal that is already rusted . . . and it's equally effective on new metal. *Preparation time is cut to a minimum.* No sandblasting or chemical cleaners are necessary. On rusted surfaces merely wire-brush quickly to remove rust scale, paint blisters, etc. Substantial maintenance savings are easily made and RUST-OLEUM *protects longer.*

Interior of late-type express car in which Rust-Oleum gives protection in enclosed areas where condensation due to temperature changes breeds rust.

- Easy to use — Rust-Oleum saves time and labor—by far the biggest costs in any maintenance program.
- Rust-Oleum, formulated to stop rust under the most dangerous, rust-causing conditions, lengthens the intervals between maintenance applications.
- Available, also, in small containers for economical distribution, small jobs and field use.

To lick your rust problems, check the advantages of RUST-OLEUM for new equipment, for re-building jobs for maintenance—in the shop and out on the right-of-way. Tell us your rust problems and write for full information and recommended applications.

RUST-OLEUM CORPORATION

2590 Oakton Street • Evanston, Illinois

Current Publications

CHARTS

Wall Charts on Railroad Transportation. Issued by the Association of American Railroads, Transportation Building, Washington 6, D.C. Free.

In response to numerous requests from teachers and visual aid instructors, a set of six colorful picture wall charts on railroad transportation has been produced especially for classroom use. Each chart measures 22 x 34 inches and is designed to fold down to file-drawer size 8½ x 11 inches. Text and pictures tell the present-day story of the railroads as part of the American way of life. In addition, each chart contains on the back of the first fold a complete unit containing suggestions for the teacher, methods of initiating the study, questions, correlations, and classroom activities. The chart titles are: how railroads serve (agriculture, commerce, government and schools, general public); railroads and world trade; railroads and industry; railroads and the community; going places by rail (passenger travel); railroads and American life.

PAMPHLETS

Comparative Statement of Railway Operating Statistics, Individual Class I Steam Railways in the United States, for the Years Ended December 31, 1949 and 1948. 63 pages. Prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Available from the Government Printing Office, Washington 25, D.C. No price given.

Contains, for each Class I railway, statistics on revenues and expenses, income and balance sheet items, traffic, freight commodities, freight and passenger train performance, yard service performance, fuel and power, motive power and car equipment and wages.

Named Passenger Trains. 24 pages. Published by the Association of American Railroads, Transportation Building, Washington 6, D. C. Free.

Lists 650 named passenger trains. The list is arranged alphabetically by name of train, and shows name of road on which, and points between which, each is operated, and the type of power used.

A Year Book of Railroad Information, 1950 Edition. 96 pages. Published by the Eastern Railroad Presidents Conference, Committee on Public Relations, 143 Liberty St., New York 6, N.Y. Free.

Contains statistics for 1949 and previous years on the railways' plant, service, rates, earnings, purchases, employees and operations. The figures, with a few exceptions, cover Class I railroads.

Fiberglas Bibliography, compiled by Edward C. Ames. 88 pages. Published by the Owens-Corning Fiberglas Corporation, Toledo, Ohio. Free.

"Fiberglas Bibliography" is a list of annotated references to selected articles which have appeared in the nation's press. Uses of Fiberglas products documented in the volume include applications in reinforced paper, reinforced hose, wire and cable, in-

sulated shipping containers, storage batteries, automobiles, trucks and trailers, railroad car insulation, coach seats, seat cushions and filters. This, the third edition, lists 710 references to articles in 338 publications. It contains indexes of publications cited, authors, and applications and uses.

Research is Learning. 32 *pages. Published by the Engineering College Research Council of the American Society for Engineering Education. Available from John I. Mattill, Secretary, Engineering College Research Council, Room* 7-204, 77 *Massachusetts Ave., Cambridge* 39, *Mass. Free.*

A comprehensive definition of the role of research in engineering education, compiled by representatives of 83 leading engineering schools, is the central theme of this report. "Engineering research," it says, "has as a basic purpose the discovery of fundamental information as well as the development of specific products useful to mankind. The research training of an engineer is training in thinking and reasoning. The excitement and stimulation of truly creative professional work are an indispensable ingredient of the educational environment". Among the twelve brief summaries of universities' research activities cited are the University of Illinois's study of the effect of high-speed braking on brake shoes and wheels and Purdue University's joint highway research project.

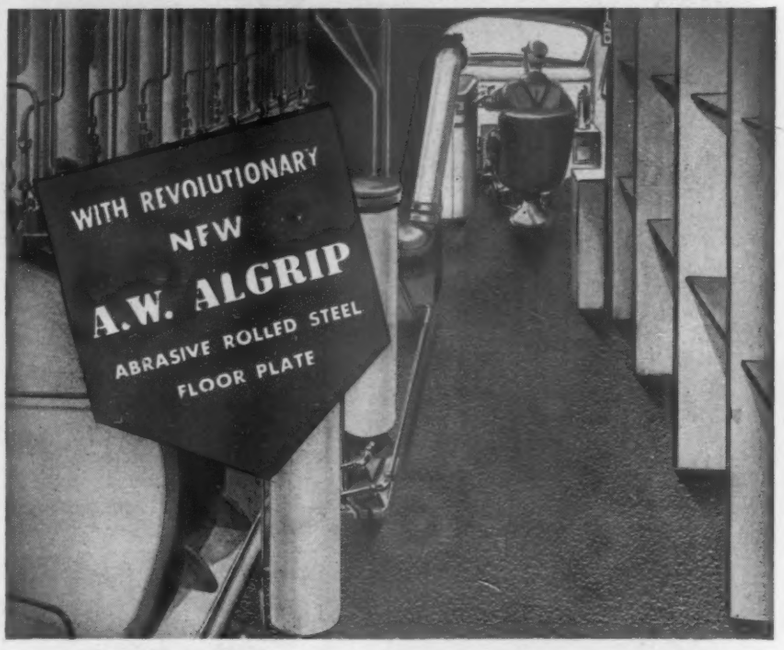
Water-Borne Commerce of the United States, Calendar Year 1949. 19 *pages. Prepared by the Board of Engineers for Rivers and Harbors, Chief of Engineers, United States Department of the Army, Washington, D.C. Free.*

Contains summaries of foreign and domestic water-borne commerce, by type of traffic, commodity, and ports.

Psychology of Safety in Supervision, by Dr. J. L. Rosenstein. Published by the National Safety Council, 425 *N. Michigan Ave., Chicago* 11, *Ill. Price, set of six booklets, to members,* 90 *cents; to non-members,* $1.80. *Lower prices for quantity orders.*

The National Safety Council has issued six new training booklets for foremen and supervisors under the above title. "You Can't Change Human Nature" is the title of the first booklet. It discusses common peculiarities of human nature and explains why no one is perfect. "What is Your U Q?" is the second booklet, explaining the meaning and importance of a supervisor's understanding quotient, or his ability to understand the attitudes and actions of his workers. "Teaching Safety on the Job," the third in the series, describes accidents that happened because workers lacked sufficient knowledge or skill, and discusses supervisory training methods required to prevent such accidents. "People Act Alike," the fourth booklet, explains in what way normal people are alike and in what manner they differ from one another. It discusses basic human wants and explains how supervisors can satisfy these wants. "Safety Takes Teamwork," the fifth of the series, suggests methods for supervisors to make safety interesting and important to workers. "You Are Human Too," the last of the series, gives supervisors a hypothetical measuring stick for determining their own strong

NOW RAILROADS CAN END COSTLY SLIPPING ACCIDENTS PERMANENTLY



Non-Slip Even on Steep Inclines

Now, for the first time, Railroads can protect both passengers and employees from dangerous slipping accidents with A.W. ALGRIP ABRASIVE Rolled Steel Floor Plate.

A.W. ALGRIP is made by rolling abrasive grain, the same type used in grinding wheels, as an integral part of the upper portion of steel floor plate. Wet or dry, A.W. ALGRIP prevents slipping, even on steep inclines. It retains its non-slip qualities for a lifetime because as the surface wears new abrasive particles are constantly exposed.

A.W. ALGRIP is ideal for installation on freight and passenger platforms, ramps, walkways, bridges, catwalks, signal towers and on rolling stock. A.W. ALGRIP, unlike other abrasive flooring, is light in weight but high in strength. It stands severe abuse without cracking and is not damaged by heat, fire or heavy traffic.

Write or use Coupon for Complete information and 8-page descriptive booklet today.

Even distribution of Abrasive Particles shown by magnifying glass.

Guards against slipping on railroad car platforms and trapdoors.

NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

A Product of **ALAN WOOD STEEL COMPANY**

CONSHOHOCKEN A-24, PA.

Gentlemen: *Please rush me complete information and a FREE copy of your 8 page A.W. ALGRIP BOOKLET.*

*Name*_____ *Title*_____

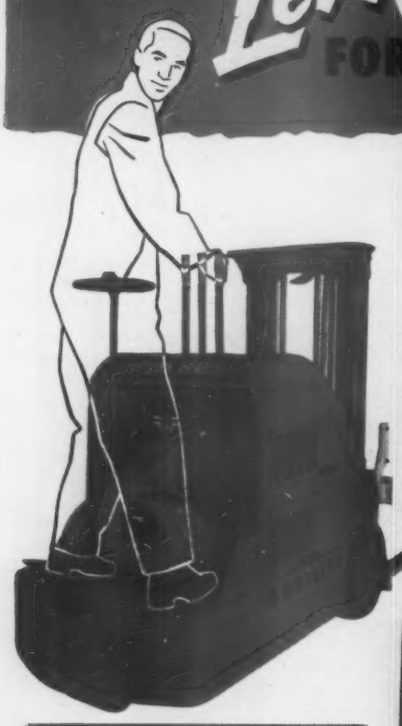
*Company*_____

*Street*_____

*City*_____ *State*_____

Other Products: PERMACLAD Stainless Clad Steel • A.W. SUPER-DIAMOND Floor Plate • Billets Plates • Sheets • Strip • (Alloy and Special Grades.)

MOBILIFT presents
2 New Lev-R-Matic Drive
FORK LIFT TRUCKS



SERVICE-TESTED ADVANTAGES, PLUS NEW MECHANICAL AND DESIGN FEATURES WILL SLASH MATERIALS HANDLING COSTS

The new models "E" and "ER" have all the proven *Mobilift* features including roller chain lift that allows unobstructed view between uprights plus mechanical improvements, new compactness and service accessibility never before possible in any lift truck. Save time and money with *Mobilift!*

STAND-UP MODEL "E": 2,000 lbs. capacity on 15" load center; outside turning radius—57". Shown with 63" mast. (Lift Height—68"; Free Lift—37".)

Grouped 2-Way Levers Perform All Jobs

Lev-R-Matic Controls...

secret of speed, ease of operation and maneuverability...PUSH or PULL a single lever to go forward or back...a multiple-disc clutch smoothly transmits positive power instantly.

Roller chain lift and hydraulic tilt mechanism are activated by functionally placed 2-way levers.

NO GEARS TO SHIFT!

Write Today!

Get all the specifications and cost-slashing MOBILIFT advantages in the new "E" series Lev-R-Matic Bulletin.

SIT-DOWN MODEL "ER": 2,000 lbs. capacity on 15" load center; outside turning radius—63"; shown with 83" mast. (Lift Height—108"; Free Lift—57".)

MOBILIFT Lev-R-Matic DRIVE

MOBILIFT CORPORATION

835 S. E. MAIN STREET • PORTLAND 14, OREGON
2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
1113 Spring St. N. W., ATLANTA • 2724 Taylor St., DALLAS
2750 San Pablo Ave., BERKELEY • 1567 E. 25th St., LOS ANGELES

points and weaknesses, and shows them how to evaluate their habits, emotional biases and abilities as supervisors.

The Indiana Railroad System. 72 pages, illustrations, maps, drawings, charts, etc. Published as Bulletin 91 (Trolley Sparks), by the Central Electric Railfans Association, P.O. Box 503, Chicago 90. A limited number of copies available at $2.50 each.

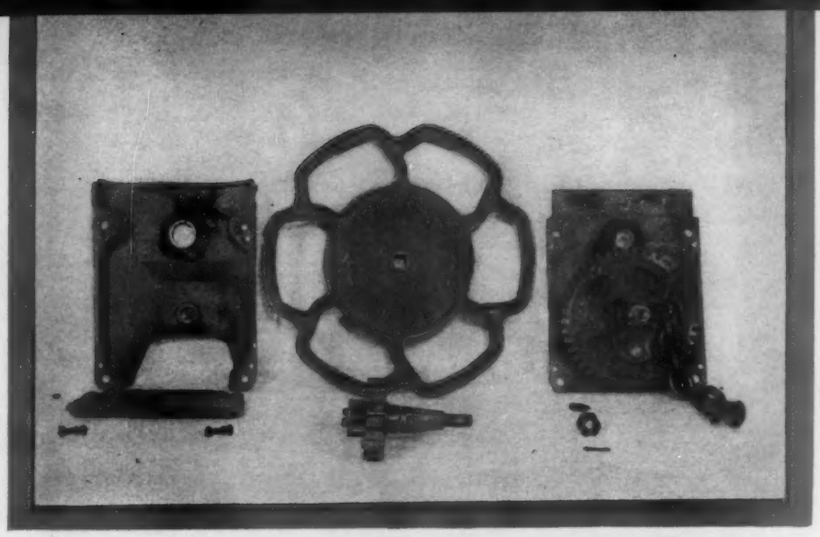
A detailed study of the now-abandoned interurban electric railway system that blanketed much of Indiana during the 1930s. Nearly 200 photographs, plus numerous drawings, maps, timetables and other data recreate the era in which the scrappy Indiana wrested considerable passenger traffic from steam railroads with its high-speed parlor, coach, dining and sleeping car trains.

The Case of the One Per Centers. 13 pages. Published by the Texas Tax Journal, P.O. Box 1094, Austin, Tex. Free.

"The highway boxcars are 45 feet long, 8 feet wide. If loaded only to legal capacity in Texas, they weigh 48,000 pounds. With other trucks weighing (loaded) 20,000 pounds and up, they comprise about one per cent of the motor vehicles registered in Texas. For this one per cent of the vehicles, we are building more costly roads and bridges, facing ever-increasing maintenance costs and suffering untold damage to our public roads." This and other interesting facts about motor truck overloading, highway expenditures, license fees, etc., are brought out in this little booklet. While written primarily for Texas taxpayers, it will be of interest to any one interested in this subject.

Loss and Damage in Rail Transportation of Watermelons in Relation to Variety of Melon, Type of Car, and Type of Protective Material, by M. V. Gerrity and P. L. Breakiron. 31 pages. Published by the Marketing and Facilities Research branch, Production and Marketing Administration, U. S. Department of Commerce, Washington 25, D. C. Free.

The high rate of loss and damage in rail shipments of watermelons from major producing areas of the United States has long been one of the serious problems in the marketing of this commodity. Some cracked, bruised, and decayed melons are found in almost every carload. In some instances, this loss is negligible, but frequently it is of such serious proportions as to result in sizeable financial loss to shippers, carriers, and receivers. It is estimated, on the basis of a study of loss and damage outturn of 17,175 carloads of watermelons during tht 1948 season, that a total of 2,175,000 melons, or the equivalent of 2,175 carloads, that were produced and loaded for shipment in all producing areas during that year never reached the consumer because of damage and deterioration, a substantial part of which occurred or developed in transit. Analysis of these loss and damage data also revealed that of the estimated equivalent of 2,175 carloads of melons lost during the 1948 season, approximately 717 carloads were decayed and the balance of 1,458 carload equivalents were lost through cracking and bruising.



A.A.R. APPROVED
AND CERTIFIED
CERTIFICATE NO. 2

Unretouched photograph of various units of Champion-Peacock Brake after 9 years of rugged service on 50-Ton Hopper Car.

Champion-Peacock PERFORMANCE

on Hopper Cars . . .

No Measurable Wear in 9 Years' Operation

Here is convincing evidence of the type of service you can expect from the Champion-Peacock Micro-Matic Brake.

In 1941, a number of Champion-Peacock Micro-Matic Brakes were installed on 50-Ton Hopper Cars on a Class 1 Road. Nine years later, after continuous service over thousands of miles, brakes removed and disassembled for examination disclosed no appreciable wear in bearings or clutch—much of the original lubricant was still retained. It was apparent that these brakes were good for the remaining life of the car, without the replacement of parts.

Today this widely-used, ONE-HAND brake is providing safe, economical operation on a host of railroads. So far this year, thousands of Champion-Peacock Brakes have been installed on various types of cars. *Fast acting*—it takes only about 2½ turns of the wheel to remove slack and another ½ turn to fully set the brake. The operator is in full command at all times, applying or releasing any degree of pressure called for—a vital aid in spotting operations. *Put this rugged, NON-SPIN brake to work for you.*

Exclusive Sales Representative—U.S., Canada, Mexico

NATIONAL BRAKE CO., INC.

30 Church Street, New York 7, N. Y.

CHAMPION-PEACOCK
MICRO-MATIC BRAKE

NON-SPIN!

Freight Operating Statistics of Large Steam Railways — Selected

Region, Road and Year		Miles of road operated	Locomotive Miles: Train-miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car-Miles: Loaded (*thousands*)	Car-Miles: Per cent loaded	Ton-Miles (*thousands*): Gross excl.locos. & tenders	Ton-Miles (*thousands*): Net rev. and non-rev.	Road-locos. on line: Serviceable: Unstored	Road-locos. on line: Serviceable: Stored	Road-locos. on line: B.O.	Road-locos. on line: Per Cent B.O.
New Eng. Region	Boston & Maine 1950	1,700	288,285	298,450	15,059	11,796	72.0	712,678	308,754	87	2	16	15.2
	1949	1,701	268,397	274,724	10,815	9,693	69.3	591,633	243,727	81	13	18	16.1
	N. Y., N. H. & Hfd. 1950	1,771	309,701	310,333	24,245	12,964	70.4	784,636	356,507	106	..	10	8.6
	1949	1,774	259,080	260,162	26,221	10,513	67.9	652,454	286,813	94	21	9	7.3
Great Lakes Region	Delaware & Hudson 1950	793	257,482	309,467	32,331	11,698	73.8	804,110	440,062	134	34	28	14.3
	1949	794	226,050	271,060	29,279	9,666	67.3	664,581	336,367	123	53	19	9.7
	Del., Lack. & Western 1950	966	299,054	322,362	32,229	13,027	71.9	830,876	385,521	85	1	38	30.6
	1949	966	258,252	285,088	26,806	11,460	67.7	748,457	329,862	98	29	24	15.9
	Erie 1950	2,231	715,765	745,420	53,435	39,329	71.0	2,435,593	1,036,544	193	3	33	14.4
	1949	2,231	609,537	627,881	44,001	32,537	65.4	2,083,277	811,228	174	55	46	16.7
	Grand Trunk Western 1950	971	273,263	280,711	2,842	9,630	65.5	658,229	291,838	54	..	12	18.2
	1949	971	244,258	251,346	2,750	8,023	64.1	535,623	221,453	58	2	7	10.4
	Lehigh Valley 1950	1,238	253,221	265,868	26,857	12,970	73.9	845,123	415,173	46	4	25	33.3
	1949	1,239	236,527	252,052	26,305	11,298	66.3	781,459	366,352	53	18	17	19.3
	New York Central 1950	10,691	3,243,910	3,424,552	205,005	123,197	65.3	8,485,083	3,909,460	997	59	331	23.9
	1949	10,680	2,850,052	3,017,386	168,136	102,145	61.7	6,957,234	3,047,425	941	206	318	21.7
	New York, Chic. & St. L. 1950	2,162	822,393	839,466	14,380	34,768	70.5	2,252,249	1,046,481	203	1	43	17.4
	1949	2,162	691,995	707,984	8,013	26,008	64.7	1,761,713	780,091	195	41	35	12.9
	Pitts. & Lake Erie 1950	221	79,094	80,896	170	3,350	69.8	276,058	170,321	29	..	16	35.6
	1949	221	68,681	69,507	34	2,699	67.5	233,043	142,160	25	9	15	30.6
	Wabash 1950	2,381	546,431	554,374	9,094	22,963	71.0	1,425,116	599,274	144	12	66	29.7
	1949	2,381	611,899	619,786	9,968	21,512	67.2	1,364,944	556,808	152	12	46	21.9
Central Eastern Region	Baltimore & Ohio 1950	6,086	1,992,500	2,404,691	257,492	71,695	66.2	5,476,595	2,770,835	702	28	250	25.5
	1949	6,086	1,678,472	2,052,927	246,818	62,545	63.1	4,639,686	2,250,257	726	83	256	24.0
	Central of New Jersey 1950	410	77,837	79,049	4,993	3,101	66.1	232,832	122,469	38	..	3	7.3
	1949	415	64,598	64,670	4,287	2,447	66.4	176,831	90,208	27	2	8	21.6
	Central of Pennsylvania 1950	212	77,214	86,638	15,973	3,015	69.6	223,999	121,922	38	..	18	32.1
	1949	212	62,182	67,120	8,924	2,402	65.4	175,451	91,136	29	4	15	31.3
	Chicago & Eastern Ill. 1950	886	129,238	129,238	2,162	5,420	73.0	334,016	160,759	25	..	..	..
	1949	909	120,042	121,044	2,273	4,300	66.9	275,779	122,863	32	9	1	2.4
	Elgin, Joliet & Eastern 1950	238	85,090	88,061	414	3,319	68.5	263,418	149,730	39	..	1	2.5
	1949	238	85,490	86,121	.....	3,052	65.7	232,299	123,722	28	5	1	2.9
	Pennsylvania System 1950	10,009	3,361,172	3,680,270	429,043	151,496	69.9	10,318,154	5,218,201	1,248	..	380	23.3
	1949	10,039	2,873,455	3,164,027	364,958	119,007	63.3	8,571,687	4,098,426	1,294	153	412	22.2
	Reading 1950	1,315	394,430	405,870	29,965	15,751	67.9	1,219,394	678,208	176	18	31	13.8
	1949	1,323	348,676	361,857	29,741	12,223	63.3	944,697	495,207	155	50	46	18.3
	Western Maryland 1950	837	189,807	229,572	26,861	6,901	63.5	561,429	311,812	139	25	16	8.9
	1949	836	161,879	191,905	21,953	5,429	60.5	448,072	240,488	120	52	10	5.5
Pocahontas Region	Chesapeake & Ohio 1950	5,045	1,565,088	1,658,485	68,727	68,444	59.3	5,721,409	3,178,799	519	13	146	21.5
	1949	5,041	1,233,376	1,300,475	49,141	51,663	58.0	4,287,629	2,307,783	490	100	115	16.3
	Norfolk & Western 1950	2,105	733,474	766,407	48,326	34,827	59.4	2,988,147	1,607,048	237	21	34	11.6
	1949	2,107	598,954	632,605	40,486	27,130	58.8	2,284,833	1,211,179	228	74	42	12.2
Southern Region	Atlantic Coast Line 1950	5,480	754,962	756,784	11,395	23,115	66.8	1,544,835	723,315	308	16	92	22.1
	1949	5,507	716,714	727,234	12,208	18,795	61.4	1,291,491	564,402	335	37	82	18.1
	Central of Georgia 1950	1,783	283,587	291,220	4,451	7,841	74.3	495,632	238,693	95	2	8	7.6
	1949	1,783	253,482	256,545	4,363	6,836	70.7	438,226	204,366	87	6	15	13.9
	Gulf, Mobile & Ohio 1950	2,851	336,267	336,267	314	16,670	74.3	1,045,450	495,465	65	..	1	1.5
	1949	2,854	312,547	312,547	108	14,265	70.8	915,732	415,815	79	18	12	11.0
	Illinois Central 1950	6,543	1,552,833	1,557,201	54,836	57,369	65.1	4,053,316	1,891,112	563	13	82	12.5
	1949	6,543	1,348,607	1,351,008	46,375	47,675	63.3	3,286,460	1,514,253	517	48	91	13.9
	Louisville & Nashville 1950	4,769	1,199,372	1,285,395	35,199	39,083	64.7	1,836,948	1,449,157	321	24	121	26.0
	1949	4,765	1,105,763	1,188,135	29,059	30,532	63.3	2,182,770	1,111,687	326	83	54	11.7
	Nash., Chatt. & St. Louis 1950	1,049	227,531	231,907	3,966	7,061	77.5	435,311	211,818	67	..	2	2.9
	1949	1,049	184,123	185,287	2,981	5,856	75.0	357,509	166,250	67	..	2	2.9
	Seaboard Air Line 1950	4,136	669,636	686,248	4,812	23,417	67.0	1,577,184	733,079	216	54	11	3.9
	1949	4,139	635,693	645,921	4,919	19,092	61.9	1,346,014	601,096	205	65	51	15.9
	Southern 1950	6,320	1,255,759	1,263,538	14,108	44,120	73.2	2,709,133	1,252,165	366	28	197	33.3
	1949	6,179	1,134,998	1,141,438	11,527	36,892	67.5	2,335,289	1,012,848	435	110	183	25.1
Northwestern Region	Chicago & North Western 1950	7,974	992,829	1,006,143	23,890	37,898	67.3	2,650,291	1,117,991	293	6	106	26.2
	1949	8,073	989,649	1,027,055	25,072	32,573	63.5	2,309,997	993,477	317	34	106	23.2
	Chicago Great Western 1950	1,441	175,328	176,526	6,012	10,423	72.3	669,453	308,004	34	..	1	2.9
	1949	1,445	166,450	166,568	7,663	8,571	67.9	546,216	231,327	34	3	3	7.5
	Chic., Milw., St. P. & Pac. 1950	10,663	1,429,592	1,489,130	53,503	57,382	67.0	3,862,185	1,771,547	453	28	95	16.5
	1949	10,663	1,471,164	1,533,500	54,423	50,036	62.1	3,506,933	1,538,673	447	52	94	15.9
	Chic., St. P., Minn. & Omaha 1950	1,606	240,449	251,096	12,549	6,925	69.0	482,184	223,560	77	..	34	30.6
	1949	1,606	225,190	235,116	12,073	5,774	68.5	398,844	181,509	77	4	28	25.7
	Duluth, Missabe & Iron Range 1950	563	192,344	194,014	2,005	9,411	51.1	959,166	580,882	50	..	2	3.8
	1949	574	167,655	168,301	1,274	8,580	50.7	868,933	524,401	41	..	..	..
	Great Northern 1950	8,220	1,120,903	1,118,340	42,894	48,904	67.4	3,595,977	1,859,924	348	61	67	14.1
	1949	8,222	1,187,670	1,190,201	64,514	45,880	59.2	3,627,740	1,771,289	369	40	64	13.5
	Minneap., St. P. & S. Ste. M. 1950	4,179	422,346	428,887	5,870	15,227	70.3	1,003,642	496,306	106	..	14	11.7
	1949	4,179	428,251	433,889	3,453	13,804	61.1	981,085	451,197	117	..	14	10.7
	Northern Pacific 1950	6,608	969,929	1,018,816	58,084	42,127	70.9	2,947,149	1,368,331	344	1	66	16.1
	1949	6,592	960,386	1,011,500	57,671	87,760	64.0	2,772,240	1,219,420	318	21	64	15.9
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1950	13,973	2,665,489	2,790,655	102,154	113,370	68.9	7,325,892	2,930,220	637	67	155	18.0
	1949	13,102	2,386,020	2,497,726	92,319	92,827	66.4	6,143,909	2,369,876	636	157	109	12.1
	Chic., Burl. & Quincy 1950	8,796	1,303,723	1,333,324	56,520	56,692	68.4	3,781,733	1,739,046	376	37	146	26.1
	1949	8,677	1,186,770	1,213,183	42,531	47,918	63.9	3,248,878	1,412,362	366	55	117	21.7
	Chic., Rock I. & Pac. 1950	7,579	1,102,517	1,140,365	19,446	39,272	68.1	2,631,615	1,232,055	256	14	74	21.5
	1949	7,589	1,030,462	1,049,359	11,634	34,938	62.7	2,362,920	1,015,898	243	48	87	23.0
	Denver & R. G. Wn. 1950	2,413	434,801	481,534	46,336	17,377	73.4	1,086,469	528,882	136	16	27	15.1
	1949	2,413	405,322	442,246	57,710	15,116	71.4	1,019,363	478,018	154	17	31	15.3
	Southern Pacific 1950	8,069	2,309,509	2,463,789	339,142	103,056	69.7	6,688,320	2,771,950	768	4	133	14.7
	1949	8,067	2,051,373	2,224,926	352,176	85,561	64.4	5,796,686	2,287,151	755	22	166	17.6
	Union Pacific 1950	9,720	2,857,562	2,972,717	209,052	120,891	67.2	8,078,896	3,233,124	619	9	137	17.9
	1949	9,721	2,431,791	2,519,003	157,843	103,064	62.8	7,081,176	2,755,915	550	107	151	18.7
	Western Pacific 1950	1,192	291,229	315,191	31,613	14,887	79.6	904,451	425,680	70	3	24	24.7
	1949	1,192	224,976	252,837	22,811	10,679	76.3	663,437	306,444	63	14	42	35.3
Southwestern Region	International-Gt. Northern* 1950	1,089	199,077	199,591	1,516	6,901	69.3	489,929	229,587	50	5	11	16.6
	1949	1,110	190,945	191,202	349	5,870	67.3	424,348	198,862	56	6	6	8.8
	Kansas City Southern 1950	886	173,974	177,416	1,149	8,904	68.0	595,167	271,653	39	2	15	26.8
	1949	886	170,063	170,400	1,128	8,246	66.0	556,692	249,763	42	7	7	12.5
	Mo.-Kans.-Texas Lines 1950	3,231	432,368	438,657	5,150	16,146	65.6	1,025,523	444,617	86	8	36	27.7
	1949	3,241	394,371	400,798	6,460	13,765	63.9	903,905	383,492	93	14	43	28.7
	Missouri Pacific* 1950	6,949	1,384,717	1,408,573	27,089	53,075	70.6	3,409,686	1,545,268	370	3	57	13.3
	1949	6,986	1,268,203	1,299,214	23,845	43,821	65.6	2,898,096	1,242,651	371	23	69	14.9
	Texas & Pacific 1950	1,844	351,966	351,966	13,555	13,729	68.7	910,764	368,001	86	2	4	4.3
	1949	1,852	312,739	312,739	8,932	11,330	66.0	747,339	303,822	100	18	3	2.5
	St. Louis-San Francisco 1950	4,604	678,664	689,677	9,021	24,617	67.9	1,579,500	693,405	206	89	66	18.3
	1949	4,614	665,308	671,066	7,449	21,281	63.2	1,465,470	643,572	216	78	40	12.0
	St. Louis Southw. Lines 1950	1,562	375,024	377,016	5,059	15,480	73.0	910,649	407,520	73	7	22	21.6
	1949	1,562	316,947	318,417	4,260	12,604	69.5	780,358	348,831	74	22	13	11.9
	Texas & New Orleans 1950	4,314	814,700	814,700	15,516	27,994	68.9	1,851,677	819,783	205	..	63	23.5
	1949	4,314	734,365	734,365	14,479	23,268	67.5	1,555,751	681,648	191	10	55	21.5

Items for the Month of August 1950 Compared with August 1949

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos. and tenders	G.t.m.per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1950	1,517	9,943	11,460	3.4	38,030	2,477	1,073	26.2	896	47.5	5,859	15.4	103.1
		1949	3,028	7,957	10,985	3.4	34,425	2,210	910	25.1	748	42.9	4,622	15.6	90.5
	N. Y., N. H. & Hfd.	1950	1,719	18,278	19,997	1.5	35,257	2,536	1,152	27.5	579	29.9	6,494	13.9	108.8
		1949	2,363	13,978	16,341	2.8	35,843	2,524	1,109	27.3	579	31.3	5,215	14.2	85.1
Great Lakes Region	Delaware & Hudson	1950	2,530	7,264	9,794	7.3	55,930	3,134	1,715	37.6	1,433	51.6	17,901	17.9	59.8
		1949	6,312	4,521	10,833	6.4	51,295	2,955	1,496	34.8	986	42.1	13,666	17.4	53.2
	Del., Lack. & Western	1950	5,639	11,836	17,475	9.9	42,694	2,842	1,319	29.6	717	33.7	12,874	15.4	106.9
		1949	8,244	8,064	16,308	7.2	41,664	2,940	1,296	28.8	642	32.9	11,015	14.4	75.1
	Erie	1950	7,549	24,293	31,042	3.8	58,143	3,427	1,458	26.4	1,081	57.7	14,987	17.1	124.3
		1949	12,972	17,166	30,138	8.3	55,945	3,443	1,341	24.9	871	53.4	11,730	16.4	86.5
	Grand Trunk Western	1950	3,874	10,928	14,802	5.1	45,631	2,432	1,078	30.3	624	31.4	9,695	18.9	151.8
		1949	5,373	7,568	12,941	11.8	43,810	2,205	912	27.6	549	31.0	7,357	20.0	137.1
	Lehigh Valley	1950	4,220	12,185	16,405	8.1	63,008	3,413	1,676	32.0	839	35.5	10,818	18.9	130.8
		1949	9,430	9,080	18,510	12.8	58,929	3,365	1,578	32.4	621	28.9	9,538	17.8	102.2
	New York Central	1950	57,345	122,935	180,280	6.6	43,334	2,659	1,225	31.7	726	35.1	11,796	16.6	94.7
		1949	78,716	76,608	155,324	8.8	41,922	2,473	1,083	29.8	640	34.8	9,204	17.2	78.6
	New York, Chic. & St. L.	1950	5,090	20,930	26,020	3.6	48,423	2,791	1,297	30.1	1,286	60.6	15,614	17.7	119.9
		1949	10,574	13,896	24,470	3.7	45,279	2,581	1,143	30.0	1,035	53.3	11,639	17.8	91.6
	Pitts. & Lake Erie	1950	4,554	11,447	16,001	14.6	47,786	3,501	2,160	50.8	346	9.8	24,861	13.7	62.0
		1949	5,846	8,694	14,540	11.9	49,531	3,393	2,070	52.7	304	8.5	20,751	14.6	51.6
	Wabash	1950	5,832	13,202	19,034	3.4	53,612	2,635	1,108	26.1	973	52.5	8,119	20.6	87.5
		1949	7,439	11,617	19,056	3.2	46,601	2,252	919	25.9	921	53.0	7,544	20.9	103.0
Central Eastern Region	Baltimore & Ohio	1950	35,100	56,407	91,507	9.2	36,811	2,804	1,419	38.6	1,037	40.6	14,686	13.4	90.8
		1949	58,182	33,897	92,079	11.5	37,285	2,818	1,367	36.0	781	34.4	11,927	13.5	71.4
	Central of New Jersey	1950	463	10,127	10,590	4.0	37,211	3,092	1,626	39.5	378	14.5	9,636	12.4	104.7
		1949	1,313	8,785	10,098	7.6	37,228	2,831	1,444	36.9	304	12.4	7,012	13.6	100.7
	Central of Pennsylvania	1950	1,086	3,806	4,892	14.9	41,313	3,103	1,689	40.4	736	26.1	18,552	14.2	74.3
		1949	2,100	3,131	5,231	12.5	40,595	3,021	1,569	37.9	542	21.8	13,867	14.4	61.6
	Chicago & Eastern Ill.	1950	1,689	3,707	5,396	9.9	43,418	2,590	1,247	29.7	1,020	47.1	5,853	16.8	182.2
		1949	3,203	3,834	7,037	11.8	38,345	2,304	1,026	28.6	563	29.5	4,360	16.7	83.4
	Elgin, Joliet & Eastern	1950	5,988	12,372	18,360	2.1	21,298	3,255	1,850	45.1	259	8.4	20,294	6.9	102.0
		1949	6,898	10,152	17,050	2.5	22,492	2,878	1,533	40.5	248	9.3	16,769	8.3	105.8
	Pennsylvania System	1950	92,284	127,137	219,421	14.3	44,492	3,178	1,607	34.4	758	31.5	16,818	14.5	88.7
		1949	144,364	87,444	231,808	14.3	44,434	3,066	1,466	34.4	571	26.2	13,169	14.9	66.3
	Reading	1950	10,867	23,590	34,457	6.9	37,546	3,092	1,720	43.1	639	21.8	16,637	12.1	74.2
		1949	16,501	13,670	30,171	7.9	35,559	2,710	1,420	40.5	532	20.8	12,074	13.1	59.9
	Western Maryland	1950	4,160	3,708	7,868	2.2	40,116	3,004	1,668	45.2	1,353	47.1	12,017	13.6	49.6
		1949	7,735	2,366	10,101	1.6	38,043	2,810	1,508	44.3	731	27.3	9,280	13.7	41.5
Pocahontas Region	Chesapeake & Ohio	1950	43,408	29,545	72,953	6.1	60,721	3,706	2,059	46.4	1,380	50.1	20,325	16.6	90.1
		1949	62,170	22,784	84,954	7.3	56,578	3,497	1,882	44.7	863	33.3	14,768	16.3	67.6
	Norfolk & Western	1950	23,453	8,578	32,031	2.6	66,724	4,129	2,221	46.1	1,644	59.9	24,627	16.4	96.6
		1949	41,059	6,787	47,846	5.0	61,284	3,864	2,048	44.6	822	31.3	18,543	16.1	69.0
Southern Region	Atlantic Coast Line	1950	10,232	16,094	26,326	4.1	32,448	2,055	962	31.3	896	42.9	4,258	15.9	65.6
		1949	14,278	11,675	25,953	5.4	29,335	1,808	790	30.0	719	39.0	3,306	16.2	58.7
	Central of Georgia	1950	1,641	5,020	6,661	4.2	30,800	1,755	845	30.4	1,113	49.2	4,318	17.6	95.1
		1949	3,595	4,771	8,366	8.6	30,335	1,736	810	29.9	813	38.4	3,697	17.5	83.2
	Gulf, Mobile & Ohio	1950	3,037	12,271	15,308	2.4	59,662	3,120	1,479	29.7	1,087	49.2	5,606	19.2	178.5
		1949	4,567	9,260	13,827	2.7	55,620	2,936	1,333	29.1	978	47.4	4,700	19.0	99.0
	Illinois Central	1950	16,609	30,741	47,350	2.8	46,346	2,639	1,231	33.0	1,276	59.5	9,323	17.8	84.7
		1949	24,976	27,201	52,177	1.9	43,484	2,464	1,135	31.8	944	46.9	7,466	17.8	73.4
	Louisville & Nashville	1950	28,604	15,756	44,360	12.1	37,245	2,372	1,212	37.1	1,072	44.7	9,802	15.7	96.7
		1949	43,334	12,121	55,455	6.1	31,496	1,982	1,009	36.4	647	28.0	7,526	16.0	89.8
	Nash., Chatt. & St. Louis	1950	1,398	5,255	6,653	3.7	37,909	1,918	933	30.0	104	44.5	6,514	19.8	117.7
		1949	3,429	3,949	7,378	12.5	36,428	1,947	905	28.4	76	35.7	5,112	18.8	96.2
	Seaboard Air Line	1950	8,202	13,918	22,120	2.4	40,528	2,413	1,122	31.3	1,085	51.7	5,718	17.2	81.3
		1949	11,298	10,897	22,195	3.0	36,546	2,170	969	31.5	913	46.8	4,685	17.3	75.9
	Southern	1950	12,416	27,983	40,399	2.4	35,963	2,178	1,007	28.4	988	48.1	6,391	16.7	75.5
		1949	18,229	27,466	45,695	5.5	35,147	2,078	901	27.5	728	39.3	5,288	17.1	57.1
Northwestern Region	Chicago & North Western	1950	17,653	38,116	55,769	3.3	41,561	2,797	1,180	29.5	643	32.4	4,523	15.6	90.2
		1949	23,619	30,259	53,878	3.2	35,256	2,466	1,061	30.5	602	31.1	3,970	15.1	81.5
	Chicago Great Western	1950	1,050	6,454	7,504	2.7	65,440	3,845	1,769	29.6	1,307	61.2	6,895	17.1	177.5
		1949	2,044	5,081	7,125	9.6	52,095	3,286	1,392	27.0	1,019	55.6	5,164	15.9	160.3
	Chic., Milw., St. P. & Pac.	1950	23,767	41,319	65,086	2.7	43,125	2,725	1,250	30.9	883	42.7	5,359	16.0	95.4
		1949	33,112	33,055	66,167	2.1	38,743	2,406	1,056	30.8	768	40.2	4,655	16.3	93.4
	Chic., St. P., Minn. & Omaha	1950	1,351	9,579	10,930	2.6	27,363	2,114	980	32.3	687	30.8	4,490	13.6	83.7
		1949	1,422	8,116	9,538	2.6	23,221	1,892	861	31.4	635	29.5	3,646	13.1	79.4
	Duluth, Missabe & Iron Range	1950	13,645	1,658	15,303	2.4	81,596	5,202	3,151	61.7	1,251	39.7	33,283	16.4	141.5
		1949	14,154	405	14,559	3.8	90,826	5,464	3,298	61.1	1,156	37.3	29,471	17.5	153.6
	Great Northern	1950	20,484	19,905	40,389	3.2	48,668	3,251	1,682	38.0	1,476	57.6	7,299	15.2	85.7
		1949	25,929	27,353	53,282	2.9	46,261	3,087	1,507	38.6	1,162	50.8	6,949	15.1	94.5
	Minneap., St. P. & S. Ste. M.	1950	6,012	10,175	16,187	5.2	42,502	2,409	1,191	32.6	1,033	45.1	3,831	17.9	128.4
		1949	7,509	9,779	17,288	4.4	40,319	2,309	1,062	32.7	925	46.3	3,483	17.6	117.4
	Northern Pacific	1950	16,726	20,020	36,746	4.9	50,047	3,065	1,423	32.5	1,247	54.1	6,680	16.5	92.9
		1949	21,657	18,198	39,855	5.8	48,350	2,899	1,275	32.3	1,054	51.0	5,967	16.7	92.5
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1950	41,953	35,462	77,415	4.7	55,222	2,765	1,106	25.8	1,210	67.9	7,230	20.1	114.9
		1949	49,103	26,804	75,907	4.1	51,735	2,586	998	25.5	981	57.8	5,835	20.1	98.2
	Chic., Burl. & Quincy	1950	13,755	29,440	43,195	3.0	53,626	2,909	1,338	30.7	1,331	63.4	6,378	18.5	85.7
		1949	17,578	23,135	40,713	4.4	50,201	2,748	1,195	29.5	1,107	58.8	5,251	18.3	80.5
	Chic., Rock I. & Pac.	1950	10,283	23,521	33,804	2.7	41,915	2,400	1,124	31.4	1,221	57.1	5,244	17.6	119.2
		1949	11,662	19,283	30,945	3.9	40,990	2,298	988	29.1	1,006	55.1	4,318	17.9	95.3
	Denver & R. G. Wn.	1950	7,380	8,562	15,942	4.8	42,779	2,508	1,221	30.4	1,104	49.4	7,070	17.1	104.1
		1949	8,893	9,805	18,698	4.2	43,714	2,531	1,187	31.6	890	39.4	6,390	17.4	84.8
	Southern Pacific	1950	23,695	45,367	69,062	2.5	45,629	2,936	1,217	26.9	1,248	66.6	11,082	15.8	106.6
		1949	27,863	37,381	65,244	4.6	45,947	2,855	1,126	26.7	1,102	64.0	9,146	16.3	95.3
	Union Pacific	1950	25,295	41,615	66,910	2.2	61,998	2,864	1,146	26.7	1,612	89.7	10,730	21.9	138.1
		1949	27,038	37,990	65,028	4.0	65,020	2,961	1,152	26.7	1,384	82.4	9,145	22.3	111.3
	Western Pacific	1950	1,643	4,309	5,952	8.7	62,294	3,110	1,464	28.6	2,323	102.1	11,520	20.1	118.0
		1949	2,389	2,508	4,897	12.2	59,046	2,960	1,367	28.7	2,061	94.1	8,293	20.0	77.1
Southwestern Region	International-Gt. Northern*	1950	762	7,854	8,616	1.5	46,085	2,487	1,166	33.3	878	38.1	6,801	18.7	104.5
		1949	905	5,664	6,569	1.6	40,709	2,245	1,052	33.9	979	42.9	5,779	18.3	94.0
	Kansas City Southern	1950	988	6,307	7,295	2.0	66,255	3,448	1,574	30.5	1,233	59.4	9,890	19.4	113.3
		1949	1,749	5,691	7,440	5.1	63,153	3,290	1,476	30.3	1,090	54.5	9,094	19.3	107.6
	Mo.-Kans.-Texas Lines	1950	2,647	5,592	8,239	2.4	44,236	2,379	1,032	27.5	1,708	94.6	4,439	18.7	118.3
		1949	4,343	8,174	12,517	3.8	42,565	2,301	976	27.9	1,033	58.0	3,817	18.6	89.4
	Missouri Pacific*	1950	14,126	21,754	35,880	2.3	48,870	2,473	1,121	29.1	1,356	66.0	7,173	19.8	113.3
		1949	18,156	17,031	35,187	2.2	45,665	2,296	984	28.4	1,102	59.2	5,738	20.0	99.3
	Texas & Pacific	1950	2,480	7,453	9,933	6.0	53,930	2,600	1,051	26.8	1,248	67.8	6,438	20.8	139.9
		1949	2,168	5,962	8,130	6.3	51,100	2,395	974	26.8	1,254	70.8	5,292	21.4	90.0
	St. Louis-San Francisco	1950	6,081	15,156	21,237	2.9	40,203	2,334	1,025	28.2	1,066	55.7	4,858	17.3	68.7
		1949	10,764	11,542	22,306	2.7	36,813	2,207	969	30.2	922	48.3	4,499	16.7	72.4
	St. Louis Southw. Lines	1950	1,379	4,805	6,184	2.4	48,669	2,432	1,088	26.3	2,036	105.9	8,416	20.0	128.2
		1949	1,657	4,464	6,121	2.5	44,774	2,470	1,104	27.7	1,789	93.0	7,204	18.2	99.4
	Texas & New Orleans	1950	3,856	18,736	22,592	2.6	42,496	2,291	1,014	29.3	1,194	59.2	6,130	18.7	104.9
		1949	4,262	16,289	20,551	3.8	40,466	2,138	937	29.3	1,101	55.7	5,097	19.1	101.4

*Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

PUNCH-LOK CLAMPS are Your Best Bet

LOOK! It's punch-locked for safety

Here are some suggestions . . .

The Punch-Lok Method is now the standard practice for all shop-hose clamping by the nation's leading railroads. Many railroads have assigned standard stockbook reference numbers to Punch-Lok clamps, fittings and tools.

Diesel locomotive builders use Punch-Lok clamps on original equipment. Railroad Diesel repair shops find Punch-Lok clamps the solution on overhaul repair work on pneumatic control hose for panel, starter, and shutters.

The use of Punch-Lok clamps is permitted by A.A.R. for train line hose on cars in interchange service.

Today Punch-Lok clamps are used extensively for holding the insulation on pressure lubricating lines, steam lines, etc. They make a better job and are easy to apply.

For dozens of miscellaneous service and repair jobs, both in the shops and on rolling stock—it's Punch-Lok clamps.

Write for full information

PUNCH-LOK COMPANY

Dept. K, 321 N. Justine Street Chicago 7, Ill.

LONGER LIFE

Unbreakable Plastic!

GITS No. 122 Prefocused Right-Angle FLASHLIGHT

No. 100 "Plastic Eye" Straight, Two-cell Flashlight.

Surpasses railroad standards for safety, efficiency, and economy. Leading roads and public utilities use it. Shockproof and non-conductive. Lessens battery drainage. Reliable in rain and snow, in any temperature. All working parts brass. Will not rust or corrode. Extra bulb and belt clip.

Send for samples and prices. Write direct or to distributor.

CASE: Black Ethyl Cellulose Plastic.

SWITCH: "On", "Off", and Signaling.

CURRENT: Standard two-cell D batteries.

BULB: Standard 2-4 volt prefocused.

REFLECTOR: Brass, nickel-plated, lacquered parabolic type.

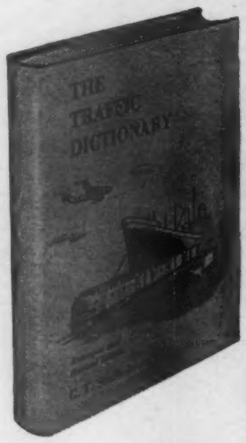
GITS *Molding Corporation*

4643 West Huron St., Chicago 44, Illinois

Canadian Distributors
MYER BALD, LTD. 69 York Street, Toronto

New Fourth Edition

THE TRAFFIC DICTIONARY



By GEORGE T. STUFFLEBEAM
Manager, Transportation Research, Remington-Rand

Enlarged and brought up to date this handbook contains 4,000 terms, phrases, code marks and abbreviations used in all branches of transportation. Terms used in warehousing, shipping documents, claim procedure and practice before the I.C.C. are included. Not only traffic managers but anyone concerned with shipping or traffic department work needs a copy of this standard reference.

320 pages, 4½ x 6, $3.75

SENT ON TEN DAYS' APPROVAL

Simmons-Boardman Publishing Corporation
30 Church Street, New York 7, N. Y.

Please send me a copy of the new edition of Stufflebeam's TRAFFIC DICTIONARY, on Ten Days' Approval. If satisfactory I will remit the list price of $3.75; otherwise I will return the book.

Name .....

Address .....

City ..... Zone..... State.....

(This offer is limited to retail customers in the United States) R.A. 12-2-50

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT RPM Delo R.R. Oil

UNIT Locomotive diesel engines

SERVICE Freight and passenger

OPERATION Local and transcontinental

MAINTENANCE Progressive

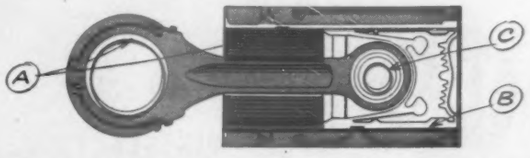
One million miles of service from engine parts!

LUBRICATED WITH RPM DELO R.R. OIL, many diesel engines in the locomotives of U.S. railroads have been in service for long periods without complete overhaul! Many of the liners, pistons, bushings and other parts in these engines have now been in use for hundreds of thousands of miles. Progressive maintenance inspections indicate that RPM DELO R.R. Oil will keep the parts in service for at least one million miles, the general overhaul period set by some of the railroads.

RPM DELO R.R. Oil keeps parts clean and free of wear-causing lacquer and gum deposits and is not corrosive to engine metals of any kind.

IN OVERLAND MOUNTAINOUS FREIGHT SERVICE for nearly 500,000 miles, this liner, lubricated with RPM DELO R.R. Oil has less than 0.006 inch wear and taper is so minor that it is barely measurable.

How RPM DELO R.R. Oil prevents wear, corrosion, oxidation



A. Special additive provides metal-adhesion qualities...keeps oil on parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent scuffing of cylinder walls.

C. Special compounds stop corrosion of any bushing or bearing metals and foaming in crankcase.

THIS PISTON AND CONNECTING ROD have been in service for more than four years. After picture was taken it was put back in the engine for further use. Note the excellent condition of the rings and bearing. All the rings are free, oil holes open and there are no troublesome deposits in any ring grooves.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any one of the companies listed below.

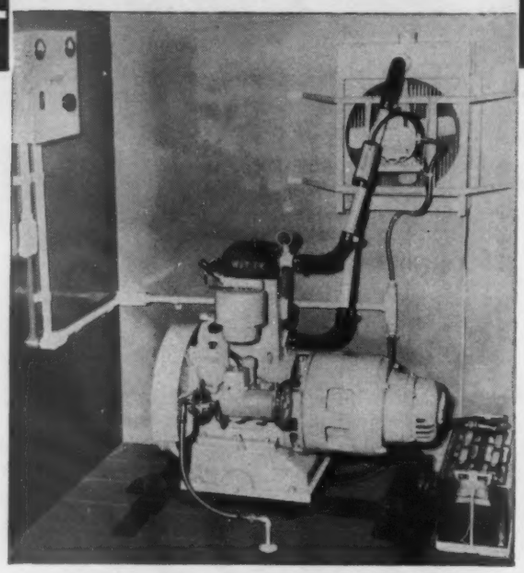
RPM DELO LUBRICATING OILS

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco
THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans
STANDARD OIL COMPANY OF TEXAS • El Paso, Texas
THE CALIFORNIA COMPANY • Denver, Colorado

Twelve major roads get power-line dependability...

...with WITTE DIESELECTRIC PLANTS



Typical Witte Dieselectric Plant caboose installation.

The finest communication system you can buy isn't worth a nickel without dependable power. Witte Dieselectric plants can give you the same *power-line dependability* that twelve major railroads* are now obtaining from Witte units.

Fuel cost averages only 1¼¢ per kilowatt hour. As for trouble-free service, many Witte Dieselectric Plants have operated 10,000 hours . . . nearly two years . . . before requiring overhaul. *Total* cost of operation can be as low as $25 a month.

Let our railroad application engineers help you choose the best unit for your needs. Write today for more information.

WITTE ENGINE WORKS, KANSAS CITY 3, MO

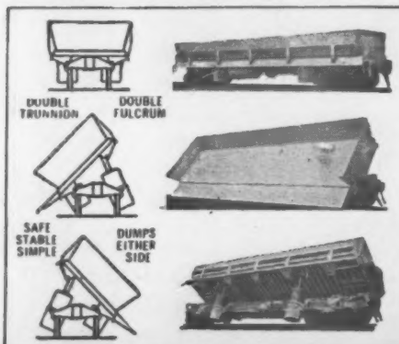
Division of Oil Well Supply Company

**Names on request.*

USS TRADE MARK

WITTE DIESELECTRIC PLANTS and DIESEL POWER UNITS

UNITED STATES STEEL



AIR DUMP CARS

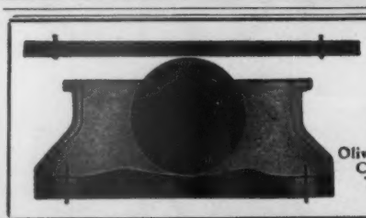
RAIL CARS
MINE CARS
AND
LOCOMOTIVES
AXLESS TRAINS

COMPLETE HAULAGE SYSTEMS

DIFFERENTIAL STEEL CAR CO.
FINDLAY, OHIO

SIDE FRAMES and BOLSTERS
FOR FREIGHT CARS

THE OHIO STEEL FOUNDRY CO. — LIMA, OHIO



STUCKI SIDE BEARINGS
Manufactured by
A. Stucki Co.
Oliver Bldg., Pittsburgh, Pa.
Canadian Representatives
The Holden Co., Ltd.
Montreal, Can.

RAILROAD EQUIPMENT
CARS—LOCOMOTIVES
REPAIR PARTS

RELAYING RAILS

STEEL STORAGE TANKS
6000—8000—10000 gal. cap.
CLEANED AND TESTED

THE PURDY COMPANY
122 S. Michigan Avenue Chicago 3, Illinois

GOLD CAR HEATING SPECIALTIES OF QUALITY
★ STEAM
★ VAPOR
★ ELECTRIC

GOLD CAR HEATING & LIGHTING CO.
33-35TH STREET, BROOKLYN 32, N.Y.

OHIO LOCOMOTIVE CRANES
GASOLINE • DIESEL
ELECTRIC • STEAM

25 TO 40 TON CAPACITY

THE OHIO LOCOMOTIVE CRANE CO
BUCYRUS, OHIO

CLASSIFIED ADVERTISEMENTS: $5.00 AN INCH (1" X 1⅝") PER INSERTION
EMPLOYMENT ADVERTISEMENTS: TEN CENTS A WORD: MINIMUM $2.00

RAILROAD EQUIPMENT—*FOR SALE*

STANDARD GAUGE FREIGHT CARS

Box, Single Sheathed, 40 & 50-Ton
Flats, 50 and 70-Ton
Gondolas, Composite, 50 & 70-Ton
Hoppers, Covered, All-Steel, 50 & 70-Ton
Hoppers, Twin, All-Steel, 50-Ton, Cross Dump
Hoppers, Twin, All-Steel, 50-Ton, Side Dump
Hoppers, Triple, All-Steel, 70-Ton, Cross Dump
Ore Hopper, All-Steel, 50-Ton, Center Dump
Stock, 40-Ton, Single Deck
Tank, 10,000-Gallon, Class III
Tank, 8,000-Gallon, Class II

STANDARD GAUGE DUMP CARS

End Dump, 10-Yd., 30-Ton, Lift Door
End Dump, 20-Yd., 50-Ton, Drop Door
Side Dump, 16-Yd., 40-Ton, Lift Door
Side Dump, 20-Yd., 40-Ton, Lift Door
Side Dump, 30-Yd., 50-Ton, Lift Door

STANDARD GAUGE LOCOMOTIVES

33-Ton, Gasoline

Gasoline—10-Ton to 25-Ton
Diesel-Mechanical—8-Ton to 30-Ton
Gasoline-Electric—35-Ton
Propane-Electric—70-Ton

GENERAL ELECTRIC DIESEL-ELECTRIC

44-Ton, 380 H.P., 4 Traction Motors
65-Ton, 4 Traction Motors

PASSENGER EQUIPMENT

All types of Passenger & Baggage Equipment, including Self-Propelled!

4 ALL-STEEL DINING CARS, AIR-CONDITIONED

Send us your inquiries
We Buy Freight Cars for Dismantling
Send us your offerings

REPAIR PARTS For All Types of Freight Cars

IRON & STEEL PRODUCTS, INC.

GENERAL OFFICE
13486 S. Brainard Ave., Chicago 33, Illinois
Phone: BAyport 1-3456

NEW YORK OFFICE
50-c Church St., New York 7, N. Y.
Phone: BEekman 3-8230

"ANYTHING containing IRON or STEEL"

STORAGE TANKS
6,000 Gallon
8,000 Gallon
10,000 Gallon

FOR SALE

65/80 ton Whitcomb diesel electric switching locomotives, new 1944.
25 ton American gas locomotive crane. Magnet generator.
20 yd. Koppel all steel air dump cars. 19 available.

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St. St. Louis 1, Mo.

POSITION WANTED

Retired Railroad Official, 52 years old, wants position January 1st as Superintendent or General Manager with industrial Terminal or Short Line Railroad with 300 miles of track or less. Experienced in Operations and Maintenance. Can operate your Line on paying basis. Address Box 571, RAILWAY AGE, 30 Church St., New York 7, N. Y.

RAILS

Relay & New. Track Accessories
W. H. DYER CO., INC.
611 Olive St. St. Louis, Mo.
Stocks at Various Points

Robert W. Hunt Company
ENGINEERS
Inspection—Tests—Consultation
All Railway Equipment
Structures and Materials
General Office:
175 W. Jackson Boulevard
CHICAGO
New York - Pittsburgh - St. Louis

BUY BONDS

FOR SALE

2 Stainless Steel exterior modern restaurant lounge cars

built new August, 1947.
For details —
H. M. Rainie,
Vice President,
Maine Central Railroad
Company, Boston, Mass.

Educational Services for RAILROAD MEN

Our New Service on Diesel Locomotive Operation is highly recommended for Engineers and Firemen

The Railway Educational Bureau
Omaha 2, Nebraska

Advertisers

IN THIS ISSUE

Adams & Westlake Company, The 33
Air Reduction Sales Company (a division of Air Reduction Company, Inc.) 8
Alan Wood Steel Company ... 105
Aluminum Company of America 2
American Locomotive Company 76, 77
American Optical Company 18
American Steel Foundries 19
Association of Manufacturers of Chilled Car Wheels 21
Atchison, Topeka and Santa Fe 101

Baltimore & Ohio Railroad ... 78
Barco Manufacturing Co. 20
Bendix Aviation Corporation, Radio Division 36
Bethlehem Steel Company 10
Bituminous Coal Institute 22
Byers Company, A. M. .Front Cover

California Company, The 111
California Oil Company, The .. 111
Canadian Cardwell Co., Ltd. .. 30
Cardwell Westinghouse Co. .. 30
Chesapeake and Ohio Railway . 87
Chicago & Eastern Illinois Railroad 100
Chicago, Indianapolis and Louisville Railway Company 93
Chicago Steel Service Company 114
Classified Department 113
Colorado Fuel and Iron Corporation, The 34

Differential Steel Car Co. 112
Dyer Co., Inc., W. H. 113

Edgewater Steel Company 23
Electric Storage Battery Company, The 16, 17
Erie Railroad 96
Esso Standard Oil Company .. 102

Fenwal, Incorporated 38
Franklin Railway Supply Company 24

General American Transportation Corporation 42
General Electric Company ..76, 77
General Railway Signal Company ....Back Cover
Gits Molding Corporation 110
Gold Car Heating & Lighting Co., The 112
Graybar Electric Company 103

Hulson Co. 11
Hunt Company, Robert W. ... 113
Hyatt Bearings Division, General Motors Corporation 4

Illinois Central 85
Iron & Steel Products, Inc. 113

Johns-Manville 35

Kansas City Southern Lines .. 98

Lackawanna Railroad 91
Lima-Hamilton Corporation .. 41

Magnus Metal Corporation, Subsidiary of National Lead Company 31
Maine Central Railroad Company 113
Miner, Inc., W. H. 3
Minneapolis & St. Louis Railway, The 97
Mississippi Valley Equipment Co. 113
Missouri-Kansas-Texas Railroad 99
Missouri Pacific Lines 95
Mobilift Corporation 106
Monon Lines 93

National Brake Co., Inc. 107
National Malleable and Steel Castings Company 14, 15
New York Central System ... 89

Ohio Locomotive Crane Co., The 112
Ohio Steel Foundry Co., The .. 112
Owens-Corning Fiberglas Corporation 32

Pressed Steel Car Company, Inc. 29
Pullman-Standard Car Manufacturing Company 12, 13
Punch-Lok Company 110
Purdy Company, The 112

Railway Age 39, 40
Railway Educational Bureau, The 113
Rust-Oleum Corporation 104

Santa Fe System Lines 101
Scullin Steel Co. 27
Simmons-Boardman Publishing Company 110
SKF Industries, Inc. 28
Standard Oil Company (Indiana) 37
Standard Oil Company of California 111
Standard Oil Company of Texas 111
Stucki Co., A. 112
Symington-Gould Corporation, The 115

Teletype Corporation 26
Tide Water Associated Oil Company 25

Union Switch & Signal Company 6

Waugh Equipment Company .. 9
Western Electric Company, Incorporated 26
Westinghouse Air Brake Co. .. 75
Witte Engine Works, Division of Oil Well Supply Company 112

CHICAGO **STEEL SERVICE** COMPANY

Ashland Avenue at 39th Street • Chicago 9, Illinois • Telephone Lafayette 3-7210

Complete Service in Carbon And Stainless Steels

The JOURNAL BOX LID That Offers REAL ECONOMY

WRITE FOR BULLETIN J-309

ECONOMY IN USE

- ✓ LIGHT AND STURDY
- ✓ EASY TO APPLY
- ✓ FULL ARTICULATION—Provides Positive Seal
- ✓ REDUCED WEAR In Housing—Full pin-bearing area.
  On Hinge Lug—By roller-bearing torsion spring.

ECONOMY IN PRICE

✓ Symington engineering has provided superior features without increasing the cost. Result: The Railroads' recognition of the real economy of this fine lid has made it a Leader in the field.

PROTECT YOUR BOXES AND AUXILIARY PARTS AGAINST DAMAGE FROM SNOW, RAIN AND DIRT
A. A. R. Certificate 1, 5, & 11 . . . Spec. M-120-47

THE SYMINGTON-GOULD CORPORATION

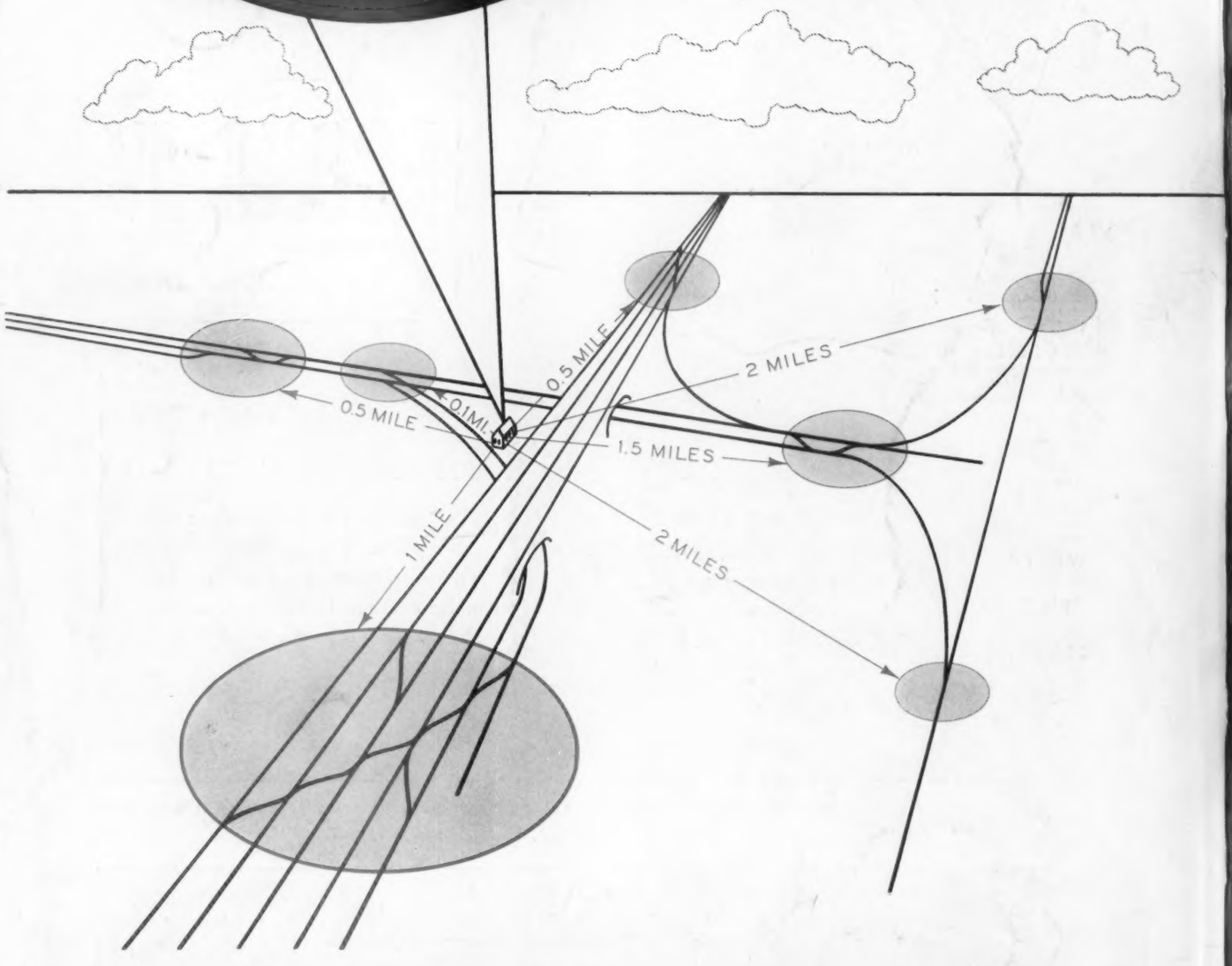
Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • In Canada ADANAC SUPPLIES, LTD., Montreal, Que.

G-R-S All-Relay Interlocking

- consolidates control
- cuts expenses
- improves operation

Call your G-R-S district office for data and estimates.



GENERAL RAILWAY SIGNAL COMPANY

New York 17 Chicago 3 ROCHESTER 2, N.Y. St. Louis 1 A-2446

FOUNDED IN 1856